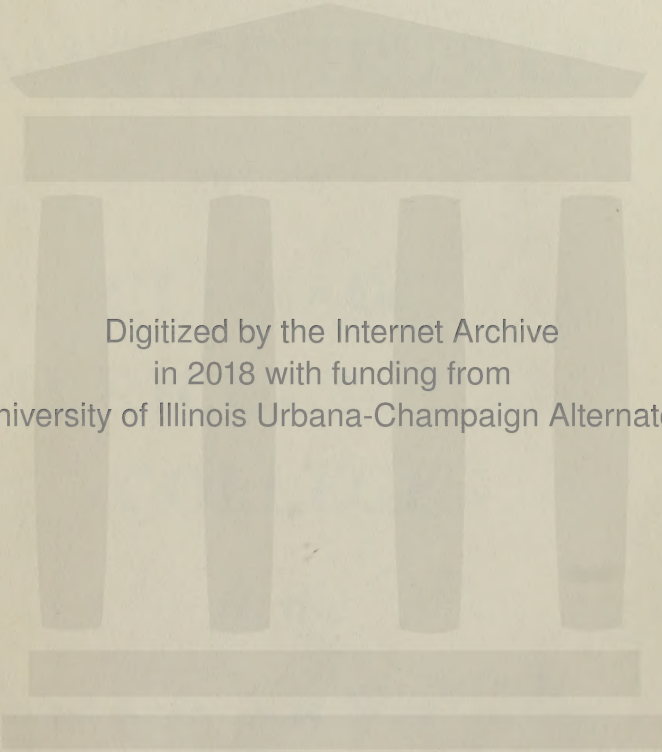
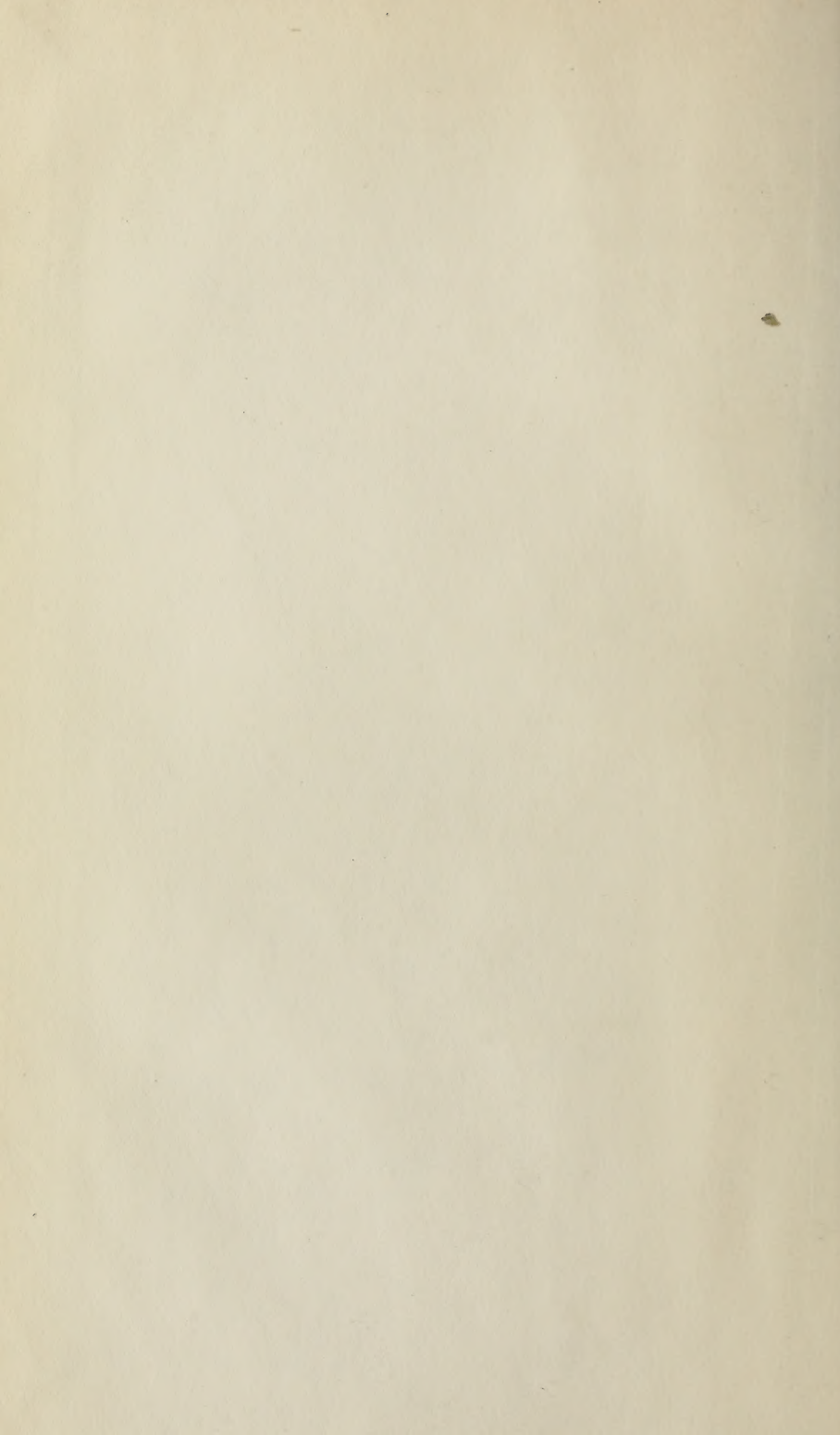


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THIRTY-FIRST ANNUAL REPORT
OF THE
BOARD OF TRUSTEES

OF THE
CLEMSON
AGRICULTURAL
COLLEGE

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TO THE
General Assembly of South Carolina

1920

THIRTY-FIRST ANNUAL REPORT
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LETTER OF TRANSMITTAL

To the General Assembly of South Carolina.
Gentlemen:

As required by law I transmit herewith the Annual Report of the Board of Trustees of the Clemson Agricultural College of South Carolina for the fiscal year 1919-20.

During the period covered by this report all previous records for attendance were exceeded and the graduating class was the largest in the history of the College.

In March a serious disciplinary disturbance took place, the Freshman and Sophomore classes leaving the institution in a body. The Board of Trustees made a careful investigation of this matter and its findings, already made public, are incorporated in this report.

The Board feels that it solved a difficult situation to the general satisfaction of the citizenship of the State and the patrons of the College and at the same time preserved the dignity of the Board, the authority of officers of the College and the discipline of the student body.

The fine spirit of cooperation in the student body and the general contentment so manifest this session, as well as the return of 95.5 percent of the eligible students of last session evidences that a serious situation was successfully and wisely disposed of.

The Board reaffirms its confidence in the President and Commandant, so forcefully expressed in its published findings and assures these officers of its hearty and continued support in the just administration of the discipline and affairs of the institution.

The attention of the General Assembly is especially invited to that part of the President's report (page 51) dealing with the financial outlook.

Clemson's chief support is the balance of the fertilizer tax over and above the cost of inspection and analysis. The total of all other funds independent of this source for collegiate purposes, totals less than \$50,000.00. The institution receives no appropriations from the Legislature for its collegiate activities. Only appropriations for public service such as tick eradication, live stock sanitary work, etc., is made.

During the past ten years the gross fertilizer tax receipts have averaged \$237,653.90. Upon this basis the Trustees have developed the College. In normal times the above figure would meet collegiate operating expenses, but with no margin for buildings or other extensive developments.

However, during the past five years the cost of making the inspection and analysis has nearly doubled, reducing ma-

terially the balance upon which the college depends. Salaries have been increased during the past five years an aggregate of about 22 percent, but the cost of labor, coal, supplies, and all laboratory materials and equipment have doubled and trebled.

Only maximum receipts from the fertilizer tax—last fiscal year \$313,000.00—have enabled the College to continue operation in the face of these greatly increased costs.

The financial prospects for 1921 are very disquieting. The sale of commercial fertilizers in South Carolina will probably be cut not less than fifty percent from the 1920 figure. The cost of making the inspection and analysis will remain practically the same as if the receipts were normal.

In that case it will be impossible to keep the college going until the General Assembly meets again in 1922.

In 1916 when the fertilizer tax had dropped from \$276,000 to \$155,000 we came to you and asked authority to negotiate a loan of \$62,400. This request was granted and even at the sacrifice of many things at the College needful to be done, the loan—principal and interest—has been repaid in full.

We cannot promise or predict continuous operation of Clemson College for 1921 unless the Legislature again comes to its rescue. Under conditons existing in the State the College does not ask for an appropriation but for authority again to negotiate such loan as may be necessary to keep the college going during 1921, the amounts borrowed to be repaid as soon as the fertilizer tax resumes normal proportions.

It will not be practical to reduce materially the budget of operating expense for this fiscal year now half over.

The budget for 1920-21 shown on page 55 of the President's report contains no large items of equipment that could be left off. College salaries (increased only about 22 percent during the last few years) cannot be reduced without serious disorganization and loss at the most vital point. The cost of supplies not already contracted for will be somewhat reduced but the aggregate saving for the rest of the session cannot be large.

With the present financial outlook constituting as it does a real emergency, the Board of Trustees, administiring a great public service indispensable to an agricultural state, regards it as a solemn duty to place the situation clearly and frankly before you, with the conviction that you will take such action as seems to you wise and expenient to insure the uninterrupted service of the College to the State.

Very respectfully submitted,

ALAN JOHNSTONE.

Dec. 31, 1920.

President Board of Trustees.

REPORT OF THE PRESIDENT OF THE COLLEGE

Covering the Fiscal Year July 1, 1919--June 30, 1920

Clemson College, S. C.,

December 1, 1920.

From W. M. Riggs, President of Clemson Agricultural College

*To Mr. Alan Johnstone, President of the Board of Trustees
of the Clemson Agricultural College.*

Dear Sir:

I have the honor to submit herewith the President's annual report covering the twenty-seventh session of the Clemson Agricultural College. The report covers the fiscal year from July 1, 1919 to June 30, 1920, and is intended for your thirty-first annual report to the Legislature.

I have arranged the report in six main divisions as follows:

1. A GENERAL STATEMENT.
2. A FISCAL STATEMENT.
3. THE COLLEGIATE WORK AND ORGANIZATION.
4. THE PUBLIC SERVICE.
5. THE STUDENT AFFAIRS.
6. THE PRESENT SESSION, 1920-1921.

PART I. A GENERAL STATEMENT.

THE SESSION OF 1919-20:

We looked forward to the session of 1919-20 with much interest and some anxiety. No one could predict just what effect the war and the disturbed conditions that followed it would have upon our attendance and upon the quality and psychology of the students who did attend.

So far as attendance was concerned our apprehensions were early set to rest. The demand for admission was greater than ever before. Many upper classmen who had been out of college for several years in the military service, returned to take up their work where they had laid it down. As a result our sessional enrollment was the largest in the history of Clemson, and the Senior Class of 147 topped by twenty-seven men the previous record-class of 1916.

In the student body there were approximately 300 men who had been in service in one capacity or another. Quite a number of these had seen overseas service, and quite a number had held commissions. It was perhaps not unnatural that to these ex-soldiers and officers the routine of cadet life seemed irksome.

From the very beginning of the session the mass-psychology of the student body was unsatisfactory. It had been so the session before, and during the spring of 1919, while I was in France, an open rebellion against the military discipline under Capt. McFeely was barely escaped. This session there was a general spirit of unrest, suspicion, and discontent in the attitude of the corps, which culminated in the walk-out of the Freshman and Sophomore classes on March 10th.

The Board at the request of the President assembled at the college on March 13th to 15th, and made a full investigation of this affair. Their findings, which appeared at the time in the public press, are attached to and made a part of this report. The stenographic records are on file at the college.

All of the Juniors and Seniors who were away on leave, save one, returned and complied with conditions laid down by the

Board as precedent to being allowed to continue in college, and out of the entire Freshman and Sophomore Classes, only thirteen failed to sign the renunciation and pledge which the Board required.

Following upon the heels of the investigation of March 13th, the President and the Commandant requested a full investigation of their administration of affairs, and this was held by the Board completely vindicating the President and the Commandant, completely vindicating the President and the Commandant, are made an appendix to this report.

The session of 1919-20—long to be remembered by all who had any responsibility for the maintenance of discipline and the preservation of the college—ended with a calm of good behavior profound in contrast with the turbulent days of March and April..

PERMANENT ADDITIONS TO COLLEGE PLANT:

There has been no substantial addition to the college plant during the last four or five years, during which time the operating expenses have so greatly increased as to leave no margin with which to build and expand.

During the year under consideration, the new filter plant was completed. A hog barn and calf barn and a fifty-foot addition to the engineering building were nearly, though not quite, completed.

With a part of the appropriation made for Agricultural Research, 300 acres adjoining the Coast Station were purchased from the Southern Railway at \$20.00 per acre for the purpose of carrying on an experiment in beef cattle raising. It is hoped through this experiment to make profitable millions of acres in the boll weevil section which have hitherto been of little value.

INVENTORY:

Our inventory as submitted to the Governor gives the following values:

INVENTORY SUMMARY

CLEMSON AGRICULTURAL COLLEGE

JUNE 30, 1920.

ALL DEPARTMENTS

| No. | Classification | Cost Value | Est. Present Value |
|------------------------|--|----------------|-----------------------|
| I.— | Office Equipment ----- | \$ 31,928.49 | \$ 33,187.94 |
| II.— | Household Equipment ----- | 43,598.29 | 43,733.11 |
| III.— | Educational & Recrea'l Equip. 140,763.54 | | 174,176.17 |
| IV.— | Library Equipment ----- | 43,885.87 | 43,639.57 |
| V.— | Vehicles ----- | 23,614.73 | 20,421.48 |
| VI.— | Live Stock ----- | 21,437.72 | 52,951.00 |
| VII.— | Medical and Surgical Equip.- | 1,485.55 | 1,177.99 |
| VIII.— | Military Equipment ----- | 3,426.66 | 3,322.71 |
| IX.— | General Plant ----- | 167,020.19 | 186,024.25 |
| X.— | Buildings ----- | 762,145.54 | 1,337,749.00 |
| XI.— | Real Estate ----- | 79,882.00 | 393,489.00 |
| Equipment Totals ----- | | \$1,319,188.58 | \$2,289,872.22 |
| XII.— | Supplies ----- | 79,264.90 | 85,201.80 |
| TOTALS ----- | | \$1,398,453.48 | \$2,375,074.02 |

INSPECTIONS AND VISITATIONS:

Board of Visitors:

Under Section 17 of the By-laws, the Board of Trustees elects each year a Board of Visitors composed of one prominent citizen from each Congressional District. For the fiscal year covered by this report, the following Board was elected:

| | | |
|---------------|----------------------|---------------|
| 1st District— | W. W. Smoak ----- | Walterboro |
| 2nd District— | H. N. Cassells ----- | Ellenton |
| 3rd District— | T. F. Watkins ----- | Anderson |
| 4th District— | Geo. A. Buist ----- | Greenville |
| 5th District— | M. L. Smith ----- | Camden |
| 6th District— | E. P. Miller ----- | Bennettsville |
| 7th District— | B. Hart Moss ----- | Orangeburg |

This Board visited the college on May 5th and 6th, and made a thorough and systematic inspection of all phases of the college life and operation. Because of the events of the March previous, they gave particular attention to the inspection of the cadet mess and other cadet interests. In their inspections of barracks, messhall, etc., they were accompanied by the cadet editors of the three college publications. The following is quoted from the report of the Board:

"In the first place, we wish to report that the splendid physical condition of the cadet corps was so obvious from their appearance that our subsequent investigation of the records on this matter was hardly necessary, and but merely verified what we were sure was the case, that the health of the students is as fine as could be in so large a body. This is not surprising in view of the setting-up exercises, regular life, and other benefits of your military discipline and drill, when coupled with the sanitary conditions, water supply, and supply and preparation of food. We were satisfied and cheerfully report that we do not see how the quality and preparation of the food could be better except at enormously greater and unreasonable expense. In our opinion there is no necessity or reason for serving better or more food than was being served at the time of our inspection. Our inquiries at random among the student body and directly with the representatives that we talked freely with on several occasions convinced us that the food then being served was typical of the food that had been served all spring.

"We report further that in our opinion the plant is being run at as high a degree of efficiency as is obtained in any business or other organization that we are acquainted with, and that the State is getting the maximum amount of results for every dollar invested in this great plant. We congratulate the State of South Carolina on the great asset it has in Clemson College and the educators connected with it, and only wish that the State and the tax payers of the State were more fully informed of the character and extent of the facilities it offers to the students and to the people of the State, and take even greater advantage than is being taken of these splendid facilities and the services rendered by those entrusted with the administration of the college teaching and college work."

The full report of the Board of Visitors is made an exhibit and attached to this report.

Inspections by the War Department:

One of the War Department's inspectors visited the college in the fall, and the following comments appeared in the inspector's report to the officer in charge of the District:

"(a) The present routine administration used here was organized by Col. Cummins and I consider it excellent.

(b) Military courtesy—very good. Every cadet salutes and salutes properly.

(c) The barracks were inspected and every room was found to be arranged exactly alike and very neatly arranged. I believe they cannot be surpassed by those of any other school in this district. This school shows promise of being a strong competitor of the distinguished colleges in this district."

We have not yet received the report of the spring inspection. However I regret to say that by the time the spring inspection came around our disciplinary troubles of March had put us out of competition for a place on the distinguished list.

LEGISLATION:

The General Assembly showed the same friendly spirit towards the college that it has always evidenced. The only appropriations requested were those for regulatory and other public lines of service. The following appropriations were made:

| | |
|-------------------------------------|---------------------|
| Extension Service ----- | \$ 81,070.00 |
| Tick Eradication ----- | 20,000.00 |
| Live Stock Sanitary Work ----- | 30,000.00 |
| Crop Pest and Diseases ----- | 10,000.00 |
| Agricultural Research Work ----- | 25,000.00 |
| Slaughter of Diseased Animals ----- | 2,000.00 |
| <i>Total</i> ----- | <u>\$168,070.00</u> |

A commission to revise the laws governing the fertilizer inspection and analysis was appointed by Governor Manning in 1917.

Governor Cooper reappointed the commission with the following personnel:

Senator W. P. Baskin, Chairman, Representatives B. W. Se-

gars and R. M. Cooper, representing the farmers; J. Ross Hanahan, representing the manufacturers; R. I. Manning Secretary of the Clemson College Board of Control; T. P. Cothran, Speaker of the House; Senator D. D. McColl, and W. C. McLain, attorneys.

The commission made its report to the General Assembly in February 1920. Their recommendations were enacted into law, and this results in a great improvement in the code under which the fertilizer inspection and analysis is carried on.

Dr. R. N. Brackett, Chief Chemist, Mr. H. M. Stackhouse, Secretary of the Board of Fertilizer Control, and President W. M. Riggs acted in an advisory capacity to the commission.

BOARD OF TRUSTEES:

The vacancy in the life membership caused by the death of Senator B. R. Tillman on July 3, 1918, remains unfilled.

The Board held its three regular annual meetings in December, April and July, and two called meetings, one in September to consider the award of scholarships, and another on March 13th to consider the walk-out of the Freshman and Sophomore Classes.

CHANGES IN THE REGULATIONS AND BY-LAWS OF THE COLLEGE:

At the meeting of the Board on June 30 just at the close of the fiscal year, a substantial revision of the College By-laws was made. Also, a special committee which had been at work on the Cadet Regulations brought in their report at this meeting, which report was unanimously adopted by the Board. Copy of the By-laws and of the Rules and Regulations can be obtained from the President's Office, Clemson College, upon request.

PART II. A FISCAL STATEMENT.

The Treasurer's annual report, which is published as a separate volume, gives the fullest information in regard to the expenditure of all college funds—even to a listing of all bills paid. The following is a condensed statement of receipts and disbursements:

RESOURCES

(Available for College Purposes)

INCOME:

| | |
|-------------------------------------|---------------------|
| Privilege Fertilizer Tax ----- | \$313,472.54 |
| Interest on Clemson Bequest ----- | 3,512.36 |
| Interest on Landscript ----- | 5,754.00 |
| Morrill & Nelson Fund (U. S.) ----- | 25,000.00 |
| Tuition from Cadets ----- | 17,472.83 |
| Sales, Interests, Rents, etc. ----- | 23,210.84 |
| <i>Total</i> ----- | <u>\$388,422.57</u> |

EXPENDITURES

COLLEGE OPERATING EXPENSES:

| | |
|--|------------------------|
| Salaries, labor, coal, materials, etc.--- | \$214,470.51 |
| Equipment for teaching ----- | 10,672.08 |
| Improvements and additions to plant | 32,774.08 |
| Building Sinking Fund for hospital and tile floor in messhall ----- | 55,457.80—\$313,374.47 |

PUBLIC SERVICE COSTS:

| | |
|--|---------------------|
| Fertilizer inspection and analysis ---\$ | 41,696.00 |
| Scholarships and advertisements ---- | 13,151.32 |
| Pee Dee Experiment Station ----- | 3,832.58 |
| Coast Experiment Station ----- | 2,973.35 |
| S. C. Experiment Station ----- | 2,671.84 |
| Crop Pest Commission ----- | 4,329.88 |
| Veterinary Inspection ----- | 5,100.55 |
| Miscellaneous Public Service ----- | 1,292.58— 75,048.10 |

Total of above ----- \$388,422.57

During the last few years the operating expenses of the college have very materially increased. In 1918-19, operating expenses were \$165,438.01 as compared with \$214,470.51 shown above. This increase was brought about through the doubling in the cost of coal, labor and all laboratory and shop materials, and salary increases of about 22%.

PUBLIC SERVICE:

As shown later under appropriate headings, the college handles a great deal of money for regulatory, research and extension service, amounting to a total of \$603,365.10. However, all of this money is appropriated under federal and state acts, which restrict its use. None of it is available for any collegiate purpose.

CADET FUNDS:

Likewise the money received from cadets for their board, laundry, uniforms and other living expenses is held in trust by the college and administered solely for the benefit of the students. Only the tuition charge and laboratory fee become a part of the college income. The total of the expenditures under the Cadet Fund amounted this fiscal year (1919-20) to \$255,456.56. The receipts were \$248,799.23.

REVOLVING ACCOUNTS:

Also, the college has a large number of open accounts not supported by state, college or other appropriations. These are simply revolving accounts, representing no income whatever to the college. In these accounts the receipts from sales of produce, etc., was \$180,873.14, and expenditures \$239,098.18. The book deficit indicated by the above figures is partly or wholly offset by increased inventory values in the shape of live stock, food stuffs on hand, etc.

RESERVE:

During the first six months of the fiscal year, July 1st to December 31st, the college receives very little revenue from the fertilizer tax—sometimes not enough to pay the cost of

inspection or analysis. It is therefore necessary to reserve sufficient funds from the previous year to carry the college over this "dry" period. The college entered on this fiscal year July 1st 1919 with a reserve of \$154,413.00. This in no sense represents a balance but merely a protective fund held back in spite of many needs which would easily have absorbed it.

SUMMARY:

The following condensed statement shows the entire monies handled during the fiscal year 1919-20 and gives an index to the magnitude and many-sidedness of the Clemson College activities.

CLASSIFIED SUMMARY OF EXPENDITURES

1919-20.

| | |
|-------------------------------------|-----------------|
| 1. For Collegiate Purposes ----- | \$240,702.44 |
| 2. For Public Service ----- | 603,365.10* |
| 3. Revolving College Accounts ----- | 245,667.34 |
| 4. Cadet Funds ----- | 255,456.56 |
| | <hr/> |
| | \$1,345,191.44† |

* Of this amount \$110,268.86 is paid out by the Treasurer of the United States and \$97,381.38 by County Treasurers, on bills approved by Director of Extension and State Veterinarian.

† In addition to this the college treasurer handled cadet deposits to the amount of \$77,556.62.

AUDIT:

The books and accounts of the Treasurer's office are audited annually by the State Bank Examiner's office. His audit is appended to this report. His testimony to the accuracy and excellence of the Treasurer's work is that of every auditor who has had an opportunity to inspect this well kept office.

RECEIPTS FROM TUITION:

The following is a statement of the receipts from tuition. The activities of the State Board of Public Welfare began in 1916.

Tuition from Students

| | | |
|---------|-------|-------------|
| 1913-14 | ----- | \$ 4,850.00 |
| 1914-15 | ----- | 5,233.00 |
| 1915-16 | ----- | 4,670.00 |
| 1916-17 | ----- | 14,243.55 |
| 1917-18 | ----- | 14,590.00 |
| 1918-19 | ----- | 13,575.73 |
| 1919-20 | ----- | 17,472.83 |

An act passed by the 1920 General Assembly exempting from tuition all students who had served during the World War will likely considerably reduce the tuition receipts for 1920-21.

PART III. COLLEGIATE WORK AND ORGANIZATION.

SUPPORT:

As stated in a previous chapter, the college work is supported almost entirely from the balance which remains from the fertilizer tax after the cost of the inspection and analysis has been deducted. For the fiscal year 1919-20, the total expenditures for what might be termed "collegiate work" were as follows:

| | | |
|---|-------|---------------------|
| For salaries, labor, insurance, coal, shop and laboratory, work, etc. | ----- | \$217,470.51 |
| For teaching equipment and minor improvements and additions to plant | ----- | 43,446.16 |
| For buildings (sinking fund) | ----- | 55,457.80 |
| <i>Total</i> | ----- | <u>\$313,374.47</u> |

The remainder of the college resources amounting to \$75,048.10 were expended for fertilizer inspection and analysis, branch stations, scholarships and other lines of public service.

ENROLLMENT:

The total enrollment for 1919-20 was 1014 distributed as follows:

(a) *In College Courses:*

| | | |
|---------|-------|-----|
| Seniors | ----- | 147 |
| Juniors | ----- | 137 |

| | |
|------------------|---------|
| Sophomores ----- | 211 |
| Freshmen ----- | 291—786 |

(b) *In Special Classes:*

| | |
|---|--------|
| One Year Agricultural ----- | 35 |
| Specials and Irregulars ----- | 10 |
| Federal Board students not in college classes ----- | 55—100 |

| | |
|-----------------------|-----|
| Regular Session ----- | 886 |
|-----------------------|-----|

| | |
|---|-----|
| (c) <i>Summer School Students</i> ----- | 128 |
|---|-----|

| | |
|-------------|-------|
| Total ----- | 1,014 |
|-------------|-------|

The 886 students enrolled during the regular session of the college were distributed by courses as follows:

| | |
|---------------------------|--------|
| In Agriculture ----- | 436 |
| In Engineering ----- | 334 |
| In Textile Industry ----- | 76 |
| In Chemistry ----- | 26 |
| In Architecture ----- | 14—886 |

The Federal Board for Vocational Education sent in all 61 disabled soliders to the college for training. Of these, 6 were in the regular college classes, 2 in the regular one year agricultural course, and 53 in special vocational courses.

VITAL STATISTICS:

The following is compiled from information furnished by 692 students in April, 1920:

| | |
|-------------------------------------|-----------------|
| 1. Average age ----- | 19 yrs., 2 mos. |
| 2. Average height ----- | 5 ft., 7 in. |
| 3. Blonds ----- 301; brunetts ----- | 391 |
| 4. From country ----- | 41.7% |
| 5. From villages (under 500) ----- | 10.6% |
| 6. From towns (500—2,500) ----- | 16.5%—68.8% |
| 7. From cities (over 2,500) ----- | 31.2% |
| 8. Born in country ----- | 58.2% |

Occupation of Parents

| | |
|--|-------|
| 9. Farmers ----- | 52.5% |
| 10. Merchants ----- | 11.9% |
| 11. Clerks ----- | 1.8% |
| 12. Lawyers, doctors and preachers ----- | 4.4% |
| 13. Mechanics, etc. ----- | 3.2% |
| 14. Unclassified ----- | 26.2% |

GRADUATES:

On Commencement Day, June 8th, diplomas were awarded to the largest graduating class in the history of the college. At the opening of the College in September, the Senior Class numbered 147 men. Of this number, 141 graduated in the following courses:

| | |
|--------------------------------------|-------|
| In Agriculture | 80 |
| In Mech. and Elec. Engineering | 37 |
| In Textile Industry | 5 |
| In Chemistry | 7 |
| In Civil Engineering | 9 |
| In Architecture | 3—141 |

Of the graduating class as a whole, 55.7% were in Agriculture. This is probably the largest percent. of graduates at any Land Grant college in the nation where there is a choice between agriculture and other subjects.

ONE YEAR AGRICULTURAL COURSE:

On May 27th, certificates were awarded to 20 men who satisfactorily completed the one year course in Agriculture. The total enrollment in this course for the session was 35.

CERTIFICATES OF MERIT:

Certificates for distinguished agricultural service were awarded to Mr. B. S. Hodges of Hodges for his work with leguminous crops, and to Mr. W. W. Wannamaker, Jr., of St. Matthews, for his work in plant breeding. Since the award of these certificates was instituted in 1914-15, the following citizens of the State have received them:

| <i>Session</i> | <i>Name</i> | <i>Address</i> |
|----------------|-------------------------|----------------|
| 1915..... | McIver Williamson | Darlington |
| | W. G. Hinson | James Island |
| 1916..... | David R. Coker | Hartsville |
| | J. C. Stribling | Pendleton |
| 1917..... | J. C. C. Brunson | Florence |
| | R. B. Watson | Ridge Spring |
| 1918..... | J. A. Shanklin | Columbia |
| | W. P. Harris | Owings |

| | | |
|-----------|---------------------------|---------------|
| 1919----- | J. W. Geraty ----- | Youngs Island |
| | D. C. Heyward ----- | Columbia |
| 1920----- | B. S. Hodges ----- | Hodges |
| | W. W. Wannamaker, Jr. --- | St. Matthews |

SUMMER SCHOOL:

The fifth summer school extended from July 1st to August 9th. The enrollment reached a total of 128 students, distributed as follows:

| | |
|-------------------------------|-----|
| Cotton graders ----- | 10 |
| Teachers of Agriculture ----- | 60 |
| Corn Club Boys ----- | 56 |
| Miscellaneous ----- | 2 |
| Total ----- | 128 |

SCHOLARSHIPS:

There were in effect 96 regular four-year county scholarships and 14 from the State-at-large. Only 18 of the One Year Agricultural Scholarships were filled. Of the above scholarships, 71.8% were held by farmers' sons, and 28.2% by the sons of merchants and professional men, which is hardly more than the percent of students who are taking textile rather than agricultural scholarships as permitted by law.

Scholarships are not now as eagerly sought as heretofore, because of the careful examination by the State Board of Public Welfare into the ability of parents whose sons are seeking scholarships. Then too, during the year covered by this report, our people have been so prosperous that the \$100.00 and free tuition offered as a scholarship prize was not considered worth the striving for. It is generally the case that scholarships are more eagerly sought in hard times than in prosperous times.

EDUCATION OF DISABLED SOLDIERS:

With the opening of this session, the Federal Board for Vocational Education entered into a contract with the college to train disabled soldiers, principally in agriculture and textile industry. We agreed to take only South Carolina men,

because of the act of the Legislature which requires us first to provide for our own, and every disabled soldier who goes into barracks displaces some able-bodied young South Carolinian who might otherwise come. The government pays tuition and all regular fees, and supplies the men with needed books and equipment. For special instruction, the college is allowed \$25.00 per month for the first twenty-five men, and \$20.00 per month for all above that number. The preparation of these men runs from illiteracy up and approximates on the average five or six school grades. Some are able to enter the regular college classes, but there are only a few such, and the remainder have to be taught as would be children in school.

Rev. J. M. Stoney was appointed to have general charge of this phase of the work, and he has proven a most satisfactory man.

The problem of training these soldiers is one hedged about with special difficulties. They are of all ages, married and single, and with varying physical infirmities. They are of all grades socially and intellectually. They enter college at irregular times. They want special course, and most of them want to live out of barracks. We have made it plain to these soldier students that they will be required to apply themselves diligently to their work and not remain at college merely for the salary which the government pays them while being educated. So far we are encouraged to believe that we will be able to do something of real value for these wounded men.

THE RESERVE OFFICERS' TRAINING COURSE:

The Student Army Training Corps, which replaced the R. O. T. C. during war times, disappeared soon after the signing of the armistice,—much to the relief of all colleges concerned. It was succeeded by a return to the R. O. T. C. plan, which offers not only the opportunity for service to the nation, but affords substantial help to the student body as a whole, and in particular to those Juniors and Seniors who elect to take the advanced course.

Under the Morrill Act establishing the Land Grant Colleges and rulings of the War Department, Land Grant Col-

leges are required to give three hours per week of military instruction for at least two years. Our curriculum requires that the three hours of instruction be continued through the Junior and Senior classes. At the beginning of the Junior year, students who desire to take what is called the Advanced Course, R. O. T. C., involving two extra hours of theoretical military work may do so if physically fit and acceptable to the President and the Commandant. Students in the advanced course receive not only a commutation for uniforms which averages about \$9.16 per annum, but in addition receive a substantial commutation for subsistence. This amounted to 40c per day during the session covered by this report, but has been increased to 53c per day for the session 1920-21. In effect, students in the advanced course of the R. O. T. C. get a scholarship which is now worth approximately \$225.00 per year for two years.

The students in the Freshman and Sophomore classes get the same commutation for uniforms which is allowed to the students in the advanced courses.

Students who do not elect to take the advanced course, which entails the two hours of extra military instruction, are required to take instead of this two hours, Psychology, Business Law, or some other elective.

The total enrollment in the R. O. T. C. during the session was 220 Juniors and Seniors in the advanced course, and 458 Freshmen and Sophomores, a total of 678, or about 84% of the entire corps, after deducting the one year agricultural students and the Federal Board students, none of whom under the government rulings would be eligible.

THE FACULTY:

The work of the Faculty during the session was up to the usual standard. The loyalty of the Faculty as a body during the troublous times in March was most gratifying to me, as it must be also to the Board of Trustees. The staunch support of the Directors and the resolutions of confidence unanimously adopted by the Faculty were most highly appreciated.

Because of the rapid rise in the cost of living, a bonus of

12% was added to the salaries of all teachers and officers at the end of the year, June 30, 1920., and a complete revision of the salary scale made to carry with it as much or more than the 12% for the future. During the last three years, and including the last increase the salaries of the Faculty have been increased about 22%, and at present compare favorably with other southern colleges.

The increases in salary made by the Board at the April meeting I believe gave general satisfaction, but during the days of competition for men and continually advancing salaries, the problem of holding a faculty together was a most serious one. The spectacle of enormous salaries paid to mechanics and other skilled workers, and princely salaries paid professional men in business lines, made even a reasonable college salary look insignificant. It is to be hoped that with the return to normal times the present salaries may be maintained and grow in value with the greater purchasing power of the dollar.

REVIEW OF DEPARTMENTS:

The unit of organization at Clemson College is the subject-matter division—such as Mathematics, Architecture, Botany, Biology, Electrical Engineering, etc. These divisions are grouped into seven departments as follows:

Agricultural; Academic; Chemistry; Engineering; Military; Textile; and at the July 1920 meeting, the new Department of Student Affairs was added.

Several divisions, such as the Library, Treasurer's office, Construction and Repairs, etc., are not grouped into departments, but are directly under the President.

The following are the Directors of the above Departments:
Agricultural Department—

(a) Resident Teaching ----- Dr. F. H. H. Calhoun

(b) Agricultural Research ----- Prof. H. W. Barre

(c) Extension Service ----- Prof. W. W. Long

Academic Department ----- Dr. D. W. Daniel

Chemistry Department ----- Dr. R. N. Brackett

Engineering Department ----- Prof. S. B. Earle

Military Department ----- Lt. Col. J. M. Cummins

Textile Department ----- Prof. C. S. Doggett

Department of Student Affairs ----- Prof. D. H. Henry

Report of the Board of Trustees

In the following review of departments, it is not attempted to give all changes in personnel and details which have already been chronicled from time to time in my reports to your annual meetings. Only changes and facts of outstanding importance will be included.

Teaching work in all departments was handicapped by the general spirit of unrest and inattention which characterized the student body during the first and second terms. After the affair of March 10th which came at the end of the second term, a distinct improvement was noted, and during the third term the work of the students on the whole was fairly satisfactory. The students still seemed unable, as they had been for several years, to get down to hard work. Without exception, the Directors of Departments reported that the class work of the session taken as a whole was much below the average.

The Academic Department:

The Academic Department includes four divisions—English, Mathematics, Physics, History and Political Economy. This department is more directly related to the public school system of the State than are the purely technical departments. Upon the student's school preparation depends very largely his progress in the subjects taught by this department. I regret to say that the majority of our students are not well prepared in the two very important subjects given in all our courses—namely, Mathematics and English. Few high school students have any preparation whatever in Physics, Chemistry or Manual Training. As a result, a good deal of work which should be done in the schools has to be done during the Freshman year in the Academic Department.

The work of the Academic Department has steadily improved under the directorship of Dr. D. W. Daniel.

The resignation of Prof. T. G. Poats, for nearly a quarter of a century head of the Physics Division, is greatly regretted. Prof. Poats was an admirable teacher, and the type of man whose influence for good was felt by his students. Prof. Poats has been succeeded by Prof. W. E. Godfrey of Mercer University.

This is the only change of importance in the department; other changes including only teachers of subordinate rank.

The Agricultural Department—(Resident Teaching) :

The teaching work of the faculty of this department, in spite of the handicaps suffered thru change in personnel an inability in some cases to fill positions with properly trained men, has been quite satisfactory. During the first and second terms the psychology of the student body militated against the best results. During the last term, there was a great improvement in this respect.

The work of the department in Agricultural Education under Prof. Crandall and Prof. Barnett is especially worthy of mention. Ten Seniors graduated in this work, and this group included some of the very ablest men in the class. No one is likely to enter this course unless he is thoroughly in earnest. I have very strongly the conviction that the greatest work the college can do is to train teachers, county agents and other missionaries of agriculture. Ten graduates going out to teach agriculture in our schools more nearly justifies the existence of the college than five times that number going out to engage in work for their individual benefit.

At present our teacher training work suffers from the lack of a local high school able to give the necessary practice training to our students. It is hoped that this need will be supplied another session by the Calhoun-Clemson school situated within easy reach of the college. Until that is done the schools at Pendleton and Seneca furnish the nearest facilities.

The regular college work of training agricultural teachers has been supplemented by our summer school, which in 1919 gave instruction to 60 teachers, and this summer to 47.

Under the stimulus of the Smith-Hughes Act the demand for teachers of agriculture in the school has been greater than the supply. In spite of the liberal salaries offered, equalling in many cases the salaries of college professors, young men have been disinclined to enter upon teaching as a profession. With a return to normal in business, perhaps this condition, so ominous to the future of education, will be improved.

During the year, Prof. C. C. Newman, the senior member of

our agricultural faculty, was away on a leave of absence, in the employ of the Combahee Company as Superintendent of their plantation in the rice field section of the state. He will return to the college with the opening of the session 1920-21. His position as Chief of the Horticultural Division was capably filled by Mr. G. P. Hoffmann, Extension Horticulturist.

The new head of the Division of Animal Husbandry, Prof. L. V. Starkey, has made rapid progress in building up the work of the division, especially with swine. Mr. F. G. Parham, President of the South Carolina Live Stock Association, in a letter to Director Barre praises very highly this phase of the college work. A small but up-to-date hog barn to cost approximately \$6,000 is under way and should be completed by January 1, 1921.

The Dairy Division has continued its steady progress in the development of a creditable dairy herd of Jerseys and Holsteins. The Guernsey breeders of the state have made a proposition to give to the college \$2,500 worth of Guernsey cattle if the college would appropriate a like amount. This proposition was accepted at the July 1920 meeting of your Board. During the year a small additional barn for the care of pure bred calves was begun and is nearing completion. Its cost will be about \$6,000.

The Chemistry Department (Teaching) :

This department is charged with the teaching of Chemistry and with the analysis of fertilizers, which latter phase will be discussed in the chapter on public service.

The total enrollment in Chemistry was 128 Freshmen, 200 Sophomores, 69 Juniors, 9 Seniors and 40 irregulars,—a total of 446. As usual, the work of teaching was well done by an efficient and earnest staff.

Our Chief Chemist, Dr. R. N. Brackett, was honored by being appointed "General Referee on Fertilizers" by the National Association of Official Agricultural Chemists, and Prof. J. H. Mitchell, a member of his staff, as "Referee on Plant Constituents", this being his second year in that office.

The Engineering Department:

During this session, and probably due to the influence of the war, there has been a distinct drift towards engineering. A larger percent. of Freshmen and Sophomores than for some years past are in the engineering courses, and a smaller percent in agriculture. The session of 1920-21, due to the past prosperous year in agriculture, shows a recovery and about an equal division of Freshmen.

During the year this department has lost one of its oldest division heads. During the summer of 1919, the U. S. Department of Agriculture offered Prof. S. T. Howard, head of the Machine Shop Division, an attractive position to assist in developing the machinery for applying boll weevil poison. As Prof. Howard was of an inventive turn of mind, we felt that it was a duty the college owed to agriculture to put no obstacles in the way of his accepting this opportunity to render a service that might be worth millions to southern farmers. Prof. Howard has for many years filled his position at Clemson with conspicuous ability and he will be greatly missed from the faculty of the Engineering Department. Prof. M. T. Birch was appointed to succeed Prof. Howard for the year covered by this report.

The fifty-foot addition to the main engineering building is nearing completion and will add greatly to the facilities of the Drawing and Wood Shop Divisions. The approximate cost of the addition is \$12,000.

The Military Department:

Capt. H. F. McFeely, U. S. A., Retired, was relieved of his detail at Clemson College during the summer of 1919 and Lt.-Col. J. M. Cummins was sent in his stead as Professor of Military Science and Tactics. By Trustee action, Col. Cummins was made also Commandant of Cadets. This is Col. Cummins' second detail at Clemson, Sept. 1, 1920. His first four-year detail from May 23, 1912 to February 17, 1916, is remembered by officers and cadets alike as a most satisfactory period in our military history.

Col. Cummins is a most efficient officer. In his dealings

with the cadets he is strict, but just and kindly, and he is keenly interested in everything that pertains to their welfare as well as in the mere maintenance of military discipline. The mutterings of a few last spring is not to be taken as indicative of the sentiment of the corps by whom Col. Cummins is deservedly held in the highest esteem. Five years of service in double harness with Col. Cummins leads me to state without reservation that he is one of the most loyal, devoted and efficient officers of the college,—one who can be depended upon in any emergency.

Much of the work of the Military Department is covered under the chapter on student affairs.

In regard to discipline, it will suffice to say at this point that taking the average of the three terms, 251 cadets had a perfect discipline record—no demerits—and 66% had less than twenty demerits, a standard entitling, so far as discipline is concerned, to a place on the honor roll.

The Commandant reports that individual discipline was good throughout the session, but that mass discipline soon after the opening of the session, was bad, until it culminated in the affair of March 10th. By the close of the session, mass discipline was better than at any time during the session.

As stated elsewhere, out of a total of 831 cadets in barracks, 17 were dismissed by the Discipline Committee and 11 suspended for one year or less.

The enrollment in the R. O. T. C. in September was as follows:

| | |
|---|------------|
| In Freshman and Sophomore Classes ----- | 458 |
| In Junior and Senior Classes ----- | 220 |
| <i>Total</i> ----- | <u>678</u> |

This is practically 80% of the corps of cadets. Of the 20% not in the R. O. T. C., some were not physically fit, and others were in short courses. A few preferred not to enroll.

During the session, the War Department detailed to the college for R. O. T. C. work the following:

Lt. Col. J. M. Cummins; Lt.-Col. Madison Pearson; Capt.

L. V. Durfee and several non-commissioned officers as drill instructors.

The college provided Major Andrew Bramlett as Associate Commandant, Mr. J. E. Oberg, Quartermaster, and Mrs. W. E. Godfrey, Clerk and Stenographer.

The Textile Department:

I am glad to report quite a revival of interest in the textile courses. There were enrolled in this department 5 Seniors, 13 Juniors, 30 Sophomores, 16 Freshmen and 9 irregular and special students, a total of 73, or about 9% of the total college enrollment. In addition to the above, 35 students in the One Year Agricultural Course were given instruction in cotton grading.

Because of the increased numbers, it was necessary to add another teacher to this department, and Mr. H. H. Willis of the class of 1917 was given a temporary appointment.

With the opening of the session, Prof. C. W. McSwain who had been away on a year's leave of absence during the S. A. T. C. session of 1918-19, returned to duty. Towards the close of the session, Prof. W. G. Blair resigned to enter the Bureau of Markets, U. S. Department of Agriculture.

On the whole, the outlook for this well equipped department is very encouraging. The work of instruction is excellent.

The Treasurer's Office:

The volume of work has so greatly increased in this office as to suggest the necessity of an additional assistant.

Ten years ago the total funds disbursed amounted to \$350,-213.27; this year the total is \$1,242,037.64. Much of the money for public service now comes from federal government, necessitating the making of exhaustive and time-consuming reports.

As always, the work of the Treasurer, Mr. S. W. Evans, and his assistants, Mr. E. B. Elmore and Mr. C. M. Hall, has been of the highest order.

THE PUBLIC UTILITIES:

All public utilities have been hard-hit by the cost and scarcity of labor and the high cost of coal and all building materials.

The Construction and Repair Division is greatly behind in its schedule of repairs to residences and public buildings. The addition to the main engineering building, the calf barn and hog barn, aggregating in cost about \$23,000, have gone forward with incredible slowness and outrageous expense. Since these structures were begun about two years ago, common labor has increased from ten to thirty cents per hour, carpenters from twenty-five to sixty-five cents per hour, brick masons from twenty-five cents to \$1.25 per hour, brick from \$6.85 to \$23.10 per M., cement from \$3.05 to \$6.10 per barrel, and rough lumber from fifteen to forty-five dollars per M.

The cost of operating the *Heat, Light and Water Division* steadily increased with the cost of coal and labor until it now amounts to approximately \$37,000.00. The coal supply during the past year was very precarious. We were indeed fortunate to get through the session without interruption.

We have reached and at times almost exceeded the engine capacity of our station and by another year it will be necessary to install an additional engine and boiler at a cost of approximately \$20,000.

Our *Telephone* facilities are still inadequate, although somewhat improved. The Bell Telephone Co. has taken over this territory from the Oconee Telephone Co. and has promised to run a special line connecting us with their system either at Seneca or Pendleton. They have not yet carried out their promise, but base the delay upon inability to get the necessary materials.

The college is fortunate in having a *campus* equal in beauty to that of any college in the nation. It is a pity that money is lacking to properly develop it. Under the general supervision of the Horticultural Division, great improvement is to be expected in the arboricultural features. However, there is a lack of sufficient cement side walks and hard surface roads.

As a community, Clemson College suffers the disadvantage

of being neither city nor country—lacking the facilities and amusements which characterize the city, and the abundance of food and fuel which characterize the country. There are no adequate markets within walking distance. When times become normal and it is possible to get things done, and we have the money with which to do them, we should make it a policy not only to furnish the bare necessities of reasonable and comfortable living, but those comforts and conveniences which will make living at Clemson attractive as compared with other parts of the country. In this day of competition for the best men and women we will find ourself behind in the competition if we do not do everything we can looking to the comfort and content of our population.

The College Farm:

In January 1920 the college farm was transferred to the Experiment Station in order that the agricultural work done might have a research as well as a utilitarian value. The farm will raise on a cost basis the necessary feed stuffs for the dairy and animal husbandry divisions of the college and lend itself to experiments on a larger scale than is practicable on the limited lands of the present station. As heretofore, the farm will operate on a reinvestment basis, no appropriations being made for its support.

On January 31, the farm showed a balance of \$5,712.13, this representing the profits earned under the management of Prof. C. C. Newman.

PART IV. THE PUBLIC SERVICE.

The work of Clemson College is not confined to resident teaching. In fact an agricultural college is a great public service corporation, which must protect and serve the agricultural and industrial people of the State, as well as educate their sons.

The public work of the college includes regulatory work, such as is required under the law governing the movement of live stock, the control of contagious live stock diseases, the

protection of buyers against diseased nursery stock and against plant diseases and insect pests, and the inspection and analysis of commercial fertilizers. This public work also includes the diffusion of agricultural information to the farmers and country children, stimulation of the schools by the offer of competitive scholarships, assistance in the school building program of the Department of Education by furnishing plans, etc., and in general is an effort to carry the benefits of the college to the largest possible number of people.

The total budget of expenditures for public service nearly doubles the expenditures for the collegiate activities of the institution. The following statement shows the kinds of service performed and the sources from which the money comes. Out of a total of \$603,365.10 spent in behalf of the farmers of South Carolina, only \$110,507.90 came out of the coffers of the State.

EXPENDITURES FOR PUBLIC SERVICE, FISCAL YEAR 1919-1920.

| No. | Kind of Service | From College Funds | From S. C. Appro'n | From U. S. Appropriation | From U. S. D. A. Appropriation | From Counties, Sales | Totals |
|-----|------------------------------|--------------------------|--------------------------|--------------------------------|--------------------------------------|----------------------------|--------------|
| 1. | Agricultural Research | \$ 9,477.77 | \$ 9,330.74* | \$ 30,000.00 | \$ ----- | \$ 4,685.62 | \$ 53,494.13 |
| 2. | Extension Service | ----- | 67,994.99 | 117,222.87 | 43,390.00 | 97,381.38 | 327,989.24† |
| 3. | Live Stock Sanitary Work | 5,100.55 | 12,838.82 | ----- | 11,078.71 | ----- | 29,018.18 |
| 4. | Tick Eradication | ----- | 18,632.00‡ | ----- | 55,800.15 | ----- | 74,432.15 |
| 5. | Hog Cholera Serum | ----- | ----- | ----- | ----- | 56,250.37 | 56,250.37 |
| 6. | Crop Pest Commission | 4,329.88 | 1,711.35§ | ----- | ----- | ----- | 6,041.23 |
| 7. | Fert. Inspection and Anal. | 41,696.00 | ----- | ----- | ----- | ----- | 41,696.00 |
| 8. | Miscellaneous | 1,292.58 | ----- | ----- | ----- | ----- | 1,292.58 |
| 9. | Agric. and Tex. Scholarships | 13,151.32 | ----- | ----- | ----- | ----- | 13,151.32 |
| 10. | Totals | \$75,048.10 | \$110,507.90 | \$147,222.87 | \$110,268.86 | \$158,317.37 | \$603,365.10 |

† Of this total Winthrop used \$105,582.52 for Home Demonstration Work with Women.

* Appropriation for full calendar year, \$25,000.

§ Appropriation for full calendar year, \$10,000.00.

‡ Appropriation for full calendar year, \$20,000.00.

It will be noted that lines of service 1, 2, 3, and 4 are carried on in cooperation with U. S. Dept. of Agri.

AGRICULTURAL RESEARCH WORK:

Agricultural research is at the basis both of agricultural teaching and agricultural extension. One effect of the world war was to increase the public appreciation for research, whose value to the nation in the emergency was clearly demonstrated in concrete form. This public recognition has led to an increased demand for the services of the station, which demand the Agricultural Experiment Station has been unable to meet because of its lack of funds. With practically a fixed income from the Hatch & Adams Acts and the greatly increased cost of salaries and materials, it was not possible to maintain even pre-war programs. In this emergency the college appealed to the Legislature for assistance and an appropriation of \$25,000 was made to aid primarily with the research work carried on at the branch stations. But for this appropriation, the work during the past year would have suffered greatly and much of it would necessarily have been abandoned.

The agricultural research work is included within the scope of the S. C. Experiment Station, whose activities include:

1. The parent experiment station at the college, this station including the college farm.
2. The branch stations located at Florence and at Summer-ville.
3. Cooperative agricultural research carried on with individual farmers.

A full account of these activities is contained in the report of the Director of the Experiment Station which is appended to this report. With the advance of the boll weevil and the necessity of diversification for other reasons, there never was a time when agricultural research was more necessary than at present. It is to be hoped that the Legislature will realize this condition and appropriate \$50,000 at the 1921 session to carry out a full research program. This was the amount requested last session, but only half the full amount was appropriated.

THE EXTENSION SERVICE:

The total fund available for extension service as shown in the preceding tabulation was \$327,989.24. Of this amount \$43,340.00 was disbursed by the Treasurer of the United States, and \$97,381.38 by the county treasurers. Of the total for extension service, Winthrop College expended on Home Demonstration Work for Women \$105,582.52.

The terms of the Smith-Lever Act under which this work is organized is now too well known to need detailed exposition here. The following are its principal features:

1. Only a college receiving the benefits of the Land Grant Act of 1861 (the "Land Grant College") can be selected by the Legislature to administer the extension work provided for under the Act. (The Legislature in 1915 designated Clemson College to carry on this work.)

2. The funds arising under the Act cannot be used for educational work done at the college, but only for giving instruction and practical demonstrations in agriculture and home economics to persons *not attending the college*. (The college is merely the agent to administer the fund—not the beneficiary of it.)

3. For the maintenance of the work there is permanently appropriated \$480,000 per annum, or \$10,000 for each state which accepts the provisions of the Act. In addition, there is appropriated \$600,000 for the second fiscal year of operation, 1915-16, and for each year thereafter for several years, \$300,000 additional, until a total of \$4,100,000 is reached. This, with the \$480,000 makes a total of \$4,580,000 and continues as a permanent annual appropriation. Unlike the initial appropriation of \$480,000, the additional appropriations are not equally divided among the states, but are to be allotted annually to each state in the proportion which its rural population bears to the total rural population of the United States based on the last preceding census. *They are also conditioned upon provision of an equal sum for maintenance of the work.*

Based upon the 1910 census, South Carolina is entitled to 2.61 percent of the additional appropriation. South Carolina's share would be as follows:

| From July 1st | Federal Appropriation | State Appropriation | Total |
|---------------------|--------------------------|------------------------|--------------|
| 1914—1st year ----- | \$ 10,000.00 | \$ 00,000.00 | \$ 10,000.00 |
| 1915—2nd year ----- | 25,691.15 | 15,691.15 | 41,382.30 |
| 1916—3rd year ----- | 38,767.11 | 28,767.11 | 67,534.22 |
| 1917—4th year ----- | 51,843.07 | 41,843.07 | 93,686.14 |
| 1918—5th year ----- | 64,919.03 | 54,919.03 | 119,838.06 |
| 1919—6th year ----- | 77,994.99 | 67,994.99 | 145,989.98 |
| 1920—7th year ----- | 91,070.95 | 81,070.95 | 172,141.90 |
| 1921—8th year ----- | 104,146.91 | 94,146.91 | 198,293.82 |
| 1922—9th year ----- | 117,222.87 | 107,222.87 | 224,445.74 |

4. The Act further provides that the extension work is to be carried on in a manner mutually agreed upon by the Secretary of Agriculture, acting through the States Relations Committee and the College. Before the Federal funds become available, plans for the work must be approved in Washington.

Organization:

The Agricultural Department, with its divisions of agronomy, animal husbandry, botany, dairying, entomology, horticulture, chemistry and veterinary science, is the machinery by which agricultural *research, extension and teaching* are all carried on. Each division is under a chief, who is responsible for the successful prosecution of the work in these three lines of service. Prof. W. W. Long is Director of Agricultural Extension Service; Prof. H. W. Barre of Agricultural Research; and Dr. F. H. H. Calhoun of Agricultural Teaching. In each division are grouped the specialists in that line—teachers, research and extension workers.

It is often suggested that the extension service ought to be located at some central point in the state. This view arises from a misapprehension of the nature of the extension service; for the extension service of the college represents a *service of the whole Agricultural Department, rather than a mere subdivision of it*. It means the extending of the benefits of the Agricultural Department of the college beyond the confines of the campus to the people of the state. To locate the office of extension service away from the college would necessitate duplicating the staff of specialists who now supervise *research and teaching as well as extension work*, and would ne-

cessitate duplicating equipment as well as men. The specialists at the college are in touch with the county agents in the field and are called upon for expert advice and for the making of tests which are germane to the demonstration work.

There is a tendency too to confuse the REGULATORY WORK with the EXTENSION SERVICE. Actually there is little—often no—connection between them. Our veterinary service, tick eradication, crop pest control, etc., *are in no sense parts of the extension service*. The one is primarily *regulatory* and the other is primarily *educational*. As a matter of fact, the Smith-Lever funds cannot be used for doing regulatory work.

In order to have a fair division of funds between the counties in the state, the Trustees some years ago adopted the following standing rule:

“That after deducting the portion that goes to Winthrop College under the memorandum of understanding between Clemson College and Winthrop College, and after paying overhead expenses and the cost of specialists, the remainder of the Smith-Lever Fund be apportioned equally to the support of county agents in all counties of the state in which the work is carried on.”

The greatest difficulty during the year has been in obtaining and holding competent county agents. The average salary paid has been \$1,965.00, with an allowance of \$400.00 for automobile travel. The cost of operating an automobile, including depreciation, is probably at least \$600.00 per year, and the agent is required to own his own car.

The competition with other states, particularly with North Carolina, has been very keen, and the only way in which good agents have been retained has been through the generous support of counties who valued their services. This must always be the solution of this phase of the problem.

Mr. W. W. Long, the Director of Extension, who was away from the college for a little over a year, on sick leave, returned to duty on December 10, 1919. I am sure the people of the state will join with the college in rejoicing at his return.

Mr. Long's admirable report covering the extension service for the year is appended hereto. Its reading must convince anyone of the immense value which the extension service has

been to South Carolina during the past year. So thoroughly is this service entrenched in the estimation of the people that the difficulty is to meet the many demands made upon agents and specialists. The money which the state puts into extension service is a real investment returning an hundred fold in actual values the cost of the work.

LIVE STOCK SANITARY WORK:

The live stock sanitary work includes the following lines:

1. Tick eradication.
2. Tuberculosis eradication.
3. Hog cholera control.
4. Investigation and control of contagious outbreaks.
5. Quarantine against introduction of diseased live stock.

The importance of the live stock sanitary work has steadily grown with the advance of the boll weevil. An important item in the program of diversified farming to meet boll weevil conditions must be the introduction of a certain amount of live stock work on every farm.

Gradually the live stock work has been in process of transfer to Columbia, and with the close of the fiscal year covered by this report, Dr. W. K. Lewis, who has been in charge of the Columbia office as Assistant Veterinarian, was made State Veterinarian, and hereafter all live stock sanitary work will be done under his supervision, and from the Columbia office.

Since the State's fiscal year extends from January 1st to the following December 31st, the State Veterinarian's report is made from January 1, 1919 up to November 1. Attention is directed to this fact because most of the other reports are for the college fiscal year, July 1st to the following June 30th.

The work of *tick eradication* was begun in South Carolina with college funds in 1907. Up to November 1, 1920, the following total expenditures were made for this work:

| | |
|--|---------------------|
| By the U. S. Department of Agriculture | \$429,412.47 |
| By State appropriations | 198,523.86 |
| From Clemson College funds | 54,104.00 |
| From county contributions (1913) | 1,083.00 |
| <i>Total</i> | <u>\$683,123.33</u> |

With this expenditure the entire state has been released from federal quarantine and the state cleared of cattle tick except in the following ten counties: Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Hampton, Horry, Jasper and Williamsburg. In most of these counties, free range conditions exist and but for this condition the work of clearing these counties would have been completed. Under free range conditions the only practical method of tick eradication is to drive up the cattle periodically and dip them. This process of clearing a given territory is one of infinite slowness and uncertainty.

The work of eradicating tuberculosis in dairy herds has been very successful. Since 1917 when this work was begun, 775 herds aggregating 18,135 cattle have been tested. Many other herds in South Carolina are in process of being accredited.

No work has been more important or needed than the control of hog cholera which is most prevalent in the lower part of the state. In all, 49,806 head of hogs were inoculated with serum and bacterins.

The work of *eradicating tuberculosis* in dairy herds has agents but largely through the instrumentality of eleven veterinarians stationed in different parts of the territory below Columbia. These additional veterinarians were possible through the increased appropriation made by the 1920 Legislature. It is the policy of the department to distribute hog cholera serum at cost, reinvesting the amounts received in additional serum. The total sales from November 1, 1919 to November 1, 1920 amounted to \$51,002.04.

In addition to hog cholera and tuberculosis control other *contagious diseases* were investigated by our veterinarians. A list of these activities, together with the cost both to the state and to the federal government, are included in the veterinarian's report. In this report will be found also a list of the employees in live stock sanitary work.

CROP PEST COMMISSION:

The Crop Pest Commission is constituted under the laws of the State of South Carolina to safeguard the agricultural

interests against the importation of diseased seed and nursery stock, and to combat insect pests and plant diseases. The Agricultural Committee of the Board constitutes the Crop Pest Commisison, with the following personnel: Mr. J. E. Wannamaker, Chairman; Messrs. R. I. Manning, B. H. Rawl, A. F. Lever and H. C. Tillman.

The Legislature at its session in 1920 for the first time made provision for financing this work, the college finances not being equal to carrying the burden. An appropriation of \$10,000 was made. This appropriation is necessary to pay the salaries of the experts, including part salary of the State Entomologist and the State Pathologist, the salaries of inspectors, travel, cost of nursery tags and other supplies, and the cost of the clerical work incident to the large correspondence and service rendered by the Commission. The Crop Pest Commission constitutes, as it were, the agricultural board of health of the state, and no investment which the state makes brings larger results by way of protection and actual returns to the farmers than the above appropriation.

The report of the State Entomologist and the State Pathologist which are attached hereto are very interesting as showing the wide scope of the work and the efficiency with which it was done. As illustrating the magnitude of the work it might be cited that 110,642 nursery permits and 35,500 sweet potato permits alone were issued during the fiscal year. The state is now completely infested with the Mexican boll weevil, but outside of our borders as shown by the map included in the report of the Entomologist, are a number of pests which will do great damage if not kept out by strict quarantine. Among these may be mentioned the pink boll worm now established in Texas and Louisiana, the European corn borer which is causing trouble in the New England States, the Mexican bean beetle now in Alabama, the Japanese beetle introduced into New York and Pennsylvania, and the brown tail and Gipsy moths which occur here and there in the northern states.

The sweet potato borer prevalent in Florida and now established in Texas, Louisiana, Mississippi and Georgia, is a real menace to the sweet potato industry and must be kept

out by vigilance and strict quarantine laws. Among the plant diseases, cotton anthracnose and cotton wilt claim large penalties. The matter of seed cotton free from anthracnose has been made the subject of special study and precautions, and during the year 25,000 permits to sell seed cotton have been issued.

Great progress has been made recently in getting uniformity in our regulations. Conferences between the Entomologists of the southern states have led to the adoption of regulations as nearly uniform as the different state conditions would permit.

Prof. A. F. Conradi, the State Entomologist, and Prof. H. W. Barre, the State Pathologist, deserve great credit for the admirable work which they have done in initiating and carrying out the rules and policies of the Crop Pest Commission.

FERTILIZER INSPECTION AND ANALYSIS:

Under the laws of the state, the Board of Trustees of Clemson College is charged with the inspection and analysis of all commercial fertilizers sold within the state. The Board delegates its authority to a special committee known as the "Board of Fertilizer Control" which gives special oversight to enforcing the fertilizer laws. This Board of Control consists of Messrs. Richard I. Manning, Chairman; J. E. Wannamaker, H. C. Tillman, J. J. Evans and Alan Johnstone, *ex officio*.

The work of inspection is under the immediate charge of Mr. H. M. Stackhouse, Secretary of the Board of Fertilizer Control and the analytical work is done in the Chemistry Department under the supervision of the Chief Chemist, Dr. R. N. Brackett. A full report from each of these officers accompanies this paper.

Mr. Stackhouse reports a sale of 1,183,978 tons of fertilizer other than cotton seed meal, and 69,912 tons of cotton seed meal. The total tonnage was 1,249,926 as compared with 1,033,887 in 1918-19.

The total number of official samples collected by the twelve inspectors who were in the field was 1,967, of which 309 were duplicates. The total samples analyzed was 1,668 as compared

with 1,301 the year previous. In addition to the official samples, 128 "farmers samples" were analyzed. The number of farmers samples the previous year was 136.

A commission to completely revise the fertilizer laws was appointed by Gov. Manning and continued by Gov. Cooper.

The commission made its report to the General Assembly in February 1920, and their report was adopted and now constitutes the fertilizer laws of the state.

In many respects the old laws were inadequate and difficult of enforcement. The new code embodies the experience of all the states which have had fertilizer inspection and analysis, and is in every way an advance over the old code.

AGRICULTURAL AND TEXTILE SCHOLARSHIPS:

Under the laws of the state the total number of scholarships offered at Clemson is 170 four-year scholarships and 53 one-year agricultural scholarships. During the recent prosperous times there have been fewer applications for these scholarships than usual. During the year covered by this report there were in effect 110 four-year scholarships and 18 scholarships in the one-year agricultural course. Of the four-year scholarships, 14 were in textile courses.

Of the total number of scholarships, 71.8% were held by farmers' sons and the remainder by the sons of merchants, professional men, etc.

During recent years there has been a steady decline in the demand for scholarships, probably due principally to the increased prosperity of the times and the more rigid scrutiny to which applicants for scholarships are subjected by the State Board of Public Welfare. It might be interesting to know that since the establishment of the scholarships in 1904, the college has had to expend from its current funds \$264,218.28 for their maintenance, the Legislature making no appropriation for the scholarships at Clemson as it does for other state institutions.

The one-year agricultural course is a most useful one to prepare young men to become practical farmers, and yet it has always been difficult to get an appreciable attendance for

such a course. It is hoped that through the increased efforts of home demonstration agents and county agents more students will enter this course in the future.

CO-OPERATIVE WORK UNDER THE SMITH-HUGHES ACT:

The purpose of the Smith-Hughes Act is to stimulate vocational training by the schools of the state. The first requirement for success in this movement is competent teachers. With the creation of the Division of Agricultural Education three years ago, the college sought to meet a pressing need by training graduates in agriculture to teach successfully in the high schools established under the Smith-Hughes Act. Not only are teachers of agriculture trained at the college, but the work of the division includes cooperative work with the Superintendent of Education in assisting the schools by the preparation of suitable leaflets and texts to be used in connection with teaching agriculture. The work of the regular session was also supplemented by a summer school by which competent teachers could be given the necessary training to prepare them for agricultural teaching. Also, beginning with the session of 1918-19, Prof. C. S. Doggett, Director of the Textile Department, began the organization of industrial education in various mill centers in the State. In this work he was assisted by Prof. N. W. Love, and both of these officers received part of their salary from the college and part from the Smith-Hughes fund in the hands of the State Superintendent of Education. In order to get teachers who were acquainted with the textile industry and allied subjects, it was necessary to take men already trained in these lines and who had sufficient education and give them the additional coaching needed to qualify them to teach.

In South Carolina there are two main lines of industry—agriculture and textiles. For that reason the Smith-Hughes work has been directed into these two fields. In time to come it will no doubt be desirable to organize instruction in other lines, but at present that seems hardly necessary.

Wherever the work of the college extends into the school field, that phase of its work is under the supervision and di-

rection of the State Superintendent of Education, and a detailed report of the work accomplished will no doubt be found in the annual report of that officer.

MISCELLANEOUS:

In addition to the other lines of public service described in this chapter, the college in its Textile Department manufactures and sells at cost South Carolina flags.

In the Drawing Division of the Engineering Department, plans for rural school buildings are prepared and distributed without cost. The State Superintendent of Education states that this assistance to the school building program of the state has been the most important single piece of work which the college has done for the schools. It is to be regretted that larger funds are not available so that more personal inspection and supervision could be given to the making and carrying out of these plans.

A six weeks Summer School with courses for teachers, boys' club winners, deficient cotton growers and deficient students round out the cycle of the activities of the college for the fiscal year.

PART V. STUDENT AFFAIRS.

THE COST OF EDUCATION AT CLEMSON:

It has always been the purpose of the Board of Trustees to keep the cost of education at Clemson as low as possible consistent with reasonable contentment and efficiency.

The rapid rise in the price of provisions and labor necessitated an increase in the charge for board to \$16.50 per month. Laundry supplies, coal and all other items entering into the living expenses of the students increased, and uniforms were very high.

The following is an exhibit of the charges for the session covered by this report:

FOR SESSION OF NINE MONTHS

1919-20

| | | |
|---------------------------------------|-------|----------|
| Board—9 mos. @ \$16.50 | ----- | \$148.50 |
| Laundry—9 mos. @ \$1.65 | ----- | 14.85 |
| Heat, Light and Water—9 mos. @ \$1.85 | ----- | 16.65 |
| Medical fee | ----- | 8.00 |
| Matriculation and incidental fee | ----- | 6.00 |
| Laboratory fee | ----- | 1.00 |
| Breakage fee | ----- | 3.00 |
| Uniforms (dress and service) | ----- | 65.55 |

Total for 9 months ----- \$263.55

This gives an average maximum cost of 97 cents per day during the session for those cadets who do not pay tuition. Tuition (\$40.00) is not included in the above analysis because only about half the student body pays it.

The average cost of uniforms to students after the first year is usually not more than one-third of the item given above.

Freshman R. O. T. C. students receive from the War Department \$18.32 as commutation for uniforms. Sophomore R. O. T. C. students receive \$9.16. Junior and Senior students in the advanced course, R. O. T. C., receive about \$117.00 as commutation for subsistence, as well as the \$9.16 on uniforms. These are 1919-20 figures. They have been materially increased for 1920-21. These payments by the government can be used to reduce materially the cost to parents.

THE CADET FUND:

The following is a statement of the Cadet Fund for 1919-20:

| Item | Receipts | Expenditures | Balance | Deficit |
|-----------------|--------------|--------------|----------|------------|
| Subsistence | \$152,367.99 | \$155,074.14 | \$ ----- | \$2,706.15 |
| Uniforms | 52,933.25 | 52,756.05 | 177.20 | ----- |
| Laundry | 14,748.88 | 14,748.88 | ----- | ----- |
| H. L. and W. | 12,477.02 | 12,474.42 | 2.60 | ----- |
| Hospital | 6,026.00 | 7,259.49 | ----- | 1,233.49 |
| Incidentals | 4,745.00 | 7,332.34 | ----- | 2,587.34 |
| Breakage | 2,536.00 | 2,536.00 | ----- | ----- |
| Laboratory Fees | 764.50 | 764.50 | ----- | ----- |
| Diplomas | 651.00 | 669.59 | ----- | 18.59 |
| Miscellaneous | 1,549.59 | 1,841.15 | ----- | 291.56 |
| Totals | \$248,799.23 | \$255,456.56 | \$179.80 | \$6,837.13 |

| | | |
|-------------------------|---------------------|---------------------|
| Net overdraft ----- | | \$6,657.33 |
| Old balance ----- | 10,015.33 | |
| | <u>\$258,814.56</u> | |
| Bal. car'd forw'd ----- | \$ 3,358.00 | |
| | <u>\$258,814.56</u> | <u>\$258,814.56</u> |

It will be noted that the deficit on subsistence was \$2,706.15, which came about through the orders of the Board after the troubles of March 10th to give better board than \$16.50 per month would furnish, without increasing the cost to the parents. The actual deficit would have been around \$6,200 but for the fact that while the students were absent from March 10th to March 21st we saved about \$3,500. This was not refunded but was used up in giving better board after March 21st.

The board given from March 21st to the end of the session was at the rate of approximately \$21.00 per month.

HISTORY OF CADET FUND:

The history of the Cadet Fund for the nine-year period of my presidency may be of interest. During this period, July 1, 1911 to June 30, 1920, the total receipts amounted to \$1,270,778.44, and the disbursements to \$1,275,269.63.

The subsistence item for the same period was, receipts \$727,470.78, disbursements \$726,655.20, a practical equality when the magnitude of the figures is considered, the difference representing about two days' board.

It has been the policy of the college to give back to the cadets in service all that they pay. Of course it would be neither legal nor proper to use college funds (further than the scholarships created by law provide) to pay for the living expenses of the students, and this is not done.

The experiences of the year indicate the necessity of increasing the charge of board to \$20.00 per month in 1920-21. This figure will be reduced as soon as there is sufficient decline in the cost of commodities and labor that would justify a decrease.

THE MESSHALL:

During the session, approximately 562,500 meals were served in the messhall to the cadets. It would take a family of five 102 years to serve as many. It is not only possible but likely, that once in a while something will go wrong. However, an inspection of this great dining room will convince the visitor that everything possible is done to give the best service possible for the price paid. At \$16.50 per month, the amount available per meal is only 18.3 cents, out of which must come labor, supervision, fuel and other costs, as well as food. No detail of the college organization has received more attention than the messhall during the past ten years, and its equipment and refrigeration facilities are the very best. A tile floor throughout completed during this summer at a cost of about \$7,000 is the last detail necessary for ideal conditions.

BARRACKS ACCOMMODATIONS:

In regard to living conditions in the barracks, I quote the following paragraph from a report of Col. Cummins to me:

"Barracks Conditions. Barracks conditions that have to do with the comfort and convenience of the cadets cannot be surpassed in this section of the country. I was sent on an inspecting tour in connection with R. O. T. C. work to ten institutions in Tennessee, Georgia, North and South Carolina, and in no place that I visited were the appointments and arrangements comparable to those that we have here. The students in a good many of these institutions sleep in double-deck beds, in small rooms, and have a mess that does not compare favorably at all with the mess at the college. The cadets here are in great good fortune that they have such comfortable and convenient quarters."

CADET HOSPITAL:

The cadet hospital showed a deficit in its operating expenses for the year of \$1,233.49, indicating the necessity of increasing the medical fee.

Our present hospital, while enjoying a wonderful record for efficient service, is subject to criticism from the standpoint of being badly out of date. When built nearly thirty years ago it was doubtless considered entirely adequate.

The Board in 1914 made the necessary appropriation to build a new and up-to-date hospital on the beautiful site overlooking Bowman field. The plans were completed and the brick delivered at the site, when the world war broke out. The price of cotton dropped, and with it our fertilizer tax, so that it was impossible to go forward with the project. After 1914, the fertilizer tax began to increase, but so greatly did cost of operation increase also that there was no chance to finance the work. However, when the fertilizer tax reached a higher level, approximately \$45,000 was put into a sinking fund to build the hospital just as soon as building conditions became normal. Meanwhile, an appropriation was made for a steam heating system and other improvements at the present hospital, and several thousand dollars will be spent on additional equipment and furnishings next session. No one need have any fears as to the efficiency of the medical service that will be rendered sick cadets.

During the session after Christmas, we had a serious epidemic of mumps and influenza. In all, we had 151 cases of mumps and 142 cases of influenza. I am glad to say that we did not have a single case of pneumonia incident to influenza. Two extra trained nurses were called in to help in the emergency. The chapel and lower halls of barracks No. 1 were used as emergency hospitals.

On January 21st, Cadet John R. Carpenter of Hartsville died of heart failure from which he had been a sufferer before coming to Clemson. An escort of honor from the student body and faculty accompanied the body home. Memorial exercises were held in chapel on January 21st. Cadet Carpenter was an excellent student, and a worthy young man in every way. His death is greatly regretted by faculty and students.

FIRE PROTECTION:

In regard to fire protection in the barracks, Col. Cummins has made several tests by sounding fire calls and recording the time necessary to empty barracks. On the evening of June 4th, fire call was sounded and assembling cadets on the parade ground and there giving them certain information was

all comprised within three minutes from the time the fire call was sounded. With the stairways at both ends of the barracks and a number of fire escapes on the rear walls, the students are as well protected as they could be, unless a stairway or ladder were run from each individual room!

DISCIPLINE:

The following is the demerit record of the corps of cadets for the three terms of the session:

During the first term 527 cadets, or 68% of the corps, received less than twenty demerits, the limit beyond which a cadet is excused from the honor roll. During the second term 69%, and during the third term 62%, attained the same standard. An average of 351 students, or nearly one-third of the corps, had perfect term records,—i.e., no demerits.

During the first term, not a single cadet exceeded the limit of demerits; during the second term only two cadets exceeded the sessional limit; and during the third term nine exceeded the term and sessional limits. In other words, out of a total of 831 students in barracks, only *eleven* failed to meet the standard required for remaining in college.

During the session 17 students were dismissed by the Discipline Committee, 11 students were suspended for periods of one session or less, and 25 were given local punishments by way of restriction to room, demerits and extras.

RELIGIOUS INFLUENCES:

Four churches representing the Presbyterian, Methodist, Baptist and Episcopal denominations, are located near the college, and cadets worship in the churches of their choice every Sunday morning during the session. Chapel services are held in Memorial Hall every morning except Saturday and Sunday. The college contributes \$500.00 to the salary of each of the four resident ministers, and in return they do pastoral work among the students in barracks. The college also contributes \$500.00 to the salary of the general Y. M. C. A. Secretary. Attendance upon chapel and church services is required, except in the case of Catholics and Jews, who are

required during church hour on Sunday to remain quietly in a room in barracks.

RECREATION :

Play is necessary as well as work in a well rounded college life. The college plant includes, along with class rooms and laboratories, proper facilities for rest and recreation. The Y. M. C. A. building, with its swimming pool, bowling alley, etc., the Bowman athletic field and Riggs field, 400 by 1,000 feet, furnish ample facilities for healthful outdoor exercises. Among the principal lines of student activities, in addition to the various lines of athletics, may be mentioned the six literary societies, class dance clubs and the student publications—The Tiger, The Chronicle and Taps.

PART VI. THE PRESENT SESSION, 1920-21.

At the time of writing this report, December 15th, we are in the midst of another fiscal year and the session of 1920-21 is well under way. In addition to the record of 1919-20 a few words regarding present conditions may not be amiss.

The return of old students this session was as usual most gratifying. After deducting for those who graduated and finished their courses, there were 501 old students in college at the close of last session. Of this number, 479 or 95.5% applied for readmission this fall.

Clemson's average sessional enrollment is about 809. The total enrollment to date is about 5% below this figure and about 12% below the bumper attendance of last session, which attendance included a large number of students who had been in the military service and returned to take up their work where they had laid it down when they enlisted. Then too, the great prosperity of last year swelled the attendance of all southern colleges. Our losses this session are in new students of the Freshman and One Year Agricultural Classes. In that respect Clemson suffered along with other southern

agricultural colleges within the cotton belt. For example, at Auburn the Freshman Class is 24% smaller this session than last; at the North Carolina A. & E. College, 15% smaller; at the Mississippi A. & M. College, 37% smaller. The attendance of agricultural colleges, coming as it does largely from the farming class, is harder hit by present financial conditions than other colleges.

The discipline and esprit of the corps, in marked contrast with last session, is all that could be desired. The cooperative spirit of the Senior Class towards the administration and its excellent attitude and conduct are especially worthy of comment and commendation. The events of last spring, hurtful as they were to the reputation of the college, like a storm, cleared the local atmosphere and made possible a return of college loyalty, confidence and contentment that have been all too lacking during the trying World War period. No discontent and no cause for complaining are discernable thus far in the student body, and I trust that none will develop.

The higher rate charged for board this session, a better organization, and an excellent mess officer have entirely cured troubles that were unavoidable during the winter of 1920, when efficient labor and sufficient provisions were sometimes unobtainable at any price.

With no prospect of having money with which to build the new hospital, projected in 1914, a substantial appropriation was made in the July budget to modernize our present facilities and make them adequate until the new hospital can be built.

REQUEST FOR LEGISLATIVE APPROPRIATIONS:

In accordance with the practice of twenty-five years, the college is asking no appropriations for its collegiate work. Our recommendations are confined entirely to those non-collegiate activities which the Legislature now supports.

The following is a list of the appropriations granted in 1920 and our recommendations for 1921:

| Lines of Service | Appropriated 1920 | Recommended for 1921 |
|-----------------------------------|--------------------|----------------------|
| 1. Extension Service ----- | \$ 81,070.95 | \$ 94,147.15 |
| 2. Tick Eradication ----- | 20,000.00 | 20,000.00 |
| 3. Live Stock Sanitary Work ---- | 30,000.00 | 50,000.00 |
| 4. Agricultural Research ----- | 25,000.00 | 50,000.00 |
| 5. Crop Pest Work ----- | 10,000.00 | 10,000.00 |
| 6. Slaughter of Diseased Stock--- | 2,000.00 | 2,000.00 |
| | <hr/> \$168,070.95 | <hr/> \$226,147.15 |

These lines of public service are too well established and too well known to need exposition here. Only a word regarding the increases would seem necessary.

1. The increase in the item for Extension Service is merely to meet the provisions of the Smith-Lever Acts, the terms of which have been already approved by the General Assembly. After one more increase in 1922 of approximately \$17,000.00 the amount becomes stationery at approximately \$112,000.00.

2. The item for Tick Eradication remains unchanged. But for the free range condition existing in a number of the lower counties, this work would by this time have been completed.

3. The increase in this appropriation is for the purpose of locating additional veterinarians over the state to look after the control of contagious diseases. At present eleven veterinarians are stationed in the lower half of the state, but this number is insufficient to meet the demands for service. The additional funds will be used to employ additional veterinarians and inspectors.

4. Agricultural Research is at the foundation of the agricultural prosperity of the state. The funds asked for this purpose represent the only money spent by South Carolina in working out its agricultural problems. With the higher salaries and the increased cost of labor and all materials entering into agricultural research, this important work, dependent upon a fixed appropriation of \$30,000 from the federal treasury, has been sorely pressed. But for the legislature appropriation of 1920, a large part of the Experiment Station's work, particularly at the sub-stations at Summer-

ville and Florence, would have suffered greatly. Fifty thousand dollars was asked in 1920 and this request is repeated. The appropriation of \$25,000 in 1920 was used chiefly to support the work of the sub-stations. The parent station at the college is in great need of assistance. Since there are no college funds available, it is necessary to urge that the full amount asked last year and this be appropriated.

5. For Crop Pests and Diseases, no increase is requested. Ten thousand dollars is sufficient to carry on this work successfully. Perhaps no single appropriation for control work is more important than this. But for the vigilance of the State Entomologist and the State Pathologist, South Carolina would soon be flooded with plant diseases and insect pests brought into the state through diseased seeds, plants and nursery stock.

6. This item for reimbursing stock owners for animals destroyed in carrying out the laws relating to contagious diseases is not always used, but is necessary because of existing statutes.

The total of \$226,147.15 represents a very small amount indeed to expend for agricultural service in a state 80% of whose people are engaged in agriculture.

In presenting these appropriations, the college does not come as a suppliant, begging that the appropriations be made. The college regards itself as an agent of the Legislature to carry out loyally and efficiently whatever amount of public service the General Assembly is willing to finance. Its duty is done when it presents these public needs. It is for the Legislature to say how much of the service, pointed out as needful, shall be done.

THE FINANCIAL PROSPECT:

In the light of changed agricultural conditions since the fiscal year opened on July 1st, the college is confronted with a financial crisis.

But for a reserve fund of \$154,000 saved up through several years by omitting many things needful to be done, the college this fall could not have opened its doors to the young

men of South Carolina. Since July 1st, the privilege tax has brought in very little money and it was not possible of course in these times to borrow or overdraw at our banks. The public service supported by state and federal appropriations goes steadily on, but Clemson College as a college would this fall have failed to function but for the reserve above referred to.

What the fertilizer tax receipts this fiscal year, (July 1st, 1920 to June 30, 1921) will total no one can now predict, but that they will fall greatly below the figure of last year, no one can doubt who correctly senses the psychology of our farmers and knows their financial limitations. When conditions were not nearly so bad as they are now, the tax dropped from \$276,000 in 1915 to \$155,000 in 1916, and we had to get permission from the Legislature to borrow \$62,400, which has been paid in full. We will be lucky indeed if the drop from 1920 to 1921 is not more than from \$313,000 to \$150,000, and in that event something must be done to tide us over.

In 1890 the friends of Clemson College in the Legislature proposed that if given the fertilizer tax of 25c per ton on all fertilizers sold within the state, the Trustees would organize and finance an efficient system of inspection and analysis and with what balance remained would "*erect and maintain*" an agricultural college without direct appropriations by the State. This understanding was enacted into law.

During the thirty-one years of this agreement, 1890-1921, the fertilizer tax has averaged \$154,740.33 per year—how much less than the public imagines!

During the thirty-one years the cost of the analysis and inspection has amounted to \$522,495.01, leaving for the maintenance and erection of the college for 31 years a possible \$4,274,467.87.

But from time to time the Legislature has seen fit to modify the original bargain by placing upon the college certain lines of public service, the cost of which have come from that balance which was to go to "*erect and maintain*" the college.

In 1901 an act was passed providing for the work of the State Veterinarian and stipulating that the cost of this work

should be paid from the funds of Clemson College. This work has cost \$109,983.25.

In 1904 the Scholarship Act was passed, and again it was specified that the cost should come from the funds of Clemson College. These scholarships have cost \$264,218.28.

In 1912 the work of the Crop Pest Commission was established and with the usual provision as to the payment of expenses. This work has cost the college \$33,637.68.

To carry out the terms of the above acts has cost the college a total of \$407,839.21.

In addition to the public service required by law, the college, before the Lever Act was passed, realizing the need for extension service, the need for branch stations and the need of additional support for research, etc., spent the following sums:

| | |
|---|---------------------|
| 1. For extension service ----- | \$127,692.04 |
| 2. For branch experiment stations ----- | 122,739.98 |
| 2. For agricultural research ----- | 25,313.31 |
| 4. For miscellaneous public service ----- | 28,578.63 |
| Total ----- | <u>\$304,323.96</u> |

The Trustees might selfishly have omitted to enter these lines of public service, since they were not required by law, and devoted these funds solely to collegiate interests, but the work needed to be done, and the agricultural college of the state owed this duty to its people. Sacrifices of buildings and equipment had to be made, but the above expenditures laid a foundation for the present splendid structure of public service now financed, as it should be, entirely by state and federal appropriations.

During the first ten years of the agreement (1890 to 1899) the gross tax averaged \$47,886.83; during the next ten years, (1900 to 1909), \$171,477.47; and during the last ten years, (1910 to 1920), \$229,004.74. As the average funds increased the Trustees developed the college in size and diversity in proportion thereto. With the beginning of the war, conditions changed. The fertilizer tax fluctuated greatly and greatly in-

creased costs made a larger support necessary. In January, 1916, the Legislature authorized a loan of \$62,400.00 to protect the college against a condition somewhat similar to that which now confronts it. By 1919 this loan with interest was repaid in full, but during the repayment there was no chance for growth at the college. In 1920 the Legislature relieved the college of the cost of some of its lines of public service which it could no longer carry. That relief and a bumper fertilizer tax of \$313,000.00 carried us safely through last fiscal year.

This year, with a prospect of the fertilizer tax being cut to half of last year's figures, the financial predicament of the college is little short of desperate. The costs of operation cannot be materially lessened during this fiscal year, and there are no items of buildings or large equipment in the 1920-21 budget that can be lopped off.

A summarized statement of the college budget enacted by the Board July 1st last for the fiscal year 1920-21 will show clearly the danger ahead:

PROSPECTIVE RESOURCES

July 1, 1920 — June 30, 1921.

| | | |
|---|---------------|--------------|
| 1. Interest on Clemson Bequest ----- | \$ | 3,512.36 |
| 2. Interest on Landscript ----- | | 5,754.00 |
| 3. Morrill & Nelson funds (U. S.) ----- | | 25,000.00 |
| 4. Estimated tuition ----- | | 17,000.00 |
| 5. Estimated rents and misc. receipts ----- | | 22,000.00 |
| | | <hr/> |
| | \$ | 73,266.36 |
| 6. Assumed fert. tax ----- | \$300,000.00* | |
| 7. Less cost of analysis and inspect'n | 51,570.00— | 248,430.00 |
| | | <hr/> |
| Total funds available for col- | | |
| work ----- | | \$321,696.36 |
| | | <hr/> |

* The estimate of the fertilizer tax at \$300,000.00 last July 1st when the price of cotton was high, seemed reasonable and even conservative—anyway, no smaller figure was adequate to carry out the college budget of expenditure, which was as follows:

SUMMARY OF BUDGET FOR 1920-21.

EXPENDITURES

| | |
|---|--------------|
| 1. Salaries of teachers and officers ----- | \$169,150.00 |
| 2. Labor, supplies, coal, repairs, insurance, etc. -- | 106,395.34 |
| 3. Teaching equipment, live stock, etc. ----- | 42,146.50 |
| <hr/> | |
| Total collegiate expenses ----- | \$317,691.84 |
| 4. Scholarships (1920-21) ----- | 11,000.00 |
| 5. Agricultural research ----- | 6,000.00 |
| <hr/> | |
| | \$334,691.84 |
| 6. Less 4% probable savings and lapses ----- | 13,387.67 |
| <hr/> | |
| Total Expenditures ----- | \$321,304.17 |
| <hr/> | |

What are we to do about it?

Suppose financial restrictions as to credit continue and the agricultural conditions do not improve? Even by consuming our reserve of \$154,000.00 we cannot carry out our budget with less than \$150,000 from the fertilizer tax, and then at the close of this fiscal year and before the Legislature will meet again, we will find ourselves without money to open the college and carry on during the first "dry" six months of 1921-22.

The Legislature has a right, and theirs is the responsibility to say whether or not they will insure us in some way against the mutations of the fertilizer tax as an alternative to closing the college before the end of this session or failing to open its doors in the fall of 1921. As faithful public servants, charged with the responsibility of administering one of the state's largest colleges, the Board must agree that unless they give the Legislature an opportunity to guarantee the college against the present emergency, either by an appropriation or by authorizing the State to borrow in our behalf, a responsibility and risk must be assumed that it would be impossible to justify. The state and the college entered into the original bargain in good faith for the *very purpose of giving to Clemson a more adequate support than could be expected from*

legislative appropriations. When conditions are such as to imperil the very purpose for which that bargain was made, it is high time, both in law and in morals, to make known the facts to the Legislature. The Legislature will recognize, as we do, that it would be indeed a catastrophe to the state if the college were forced to suspend for a time, and our student body and faculty become scattered. Uninsured by legislative protection, such a calamity is possible, even probable, because of the nature of Clemson's support and the present unusual conditions which may reduce the fertilizer tax to the lowest amount in recent years—an amount upon which it is impossible to keep the college going.

In the present emergency, the responsibility must rest with the Legislature, and I have no fears as to the manner in which this responsibility will be met.

Respectfully submitted,

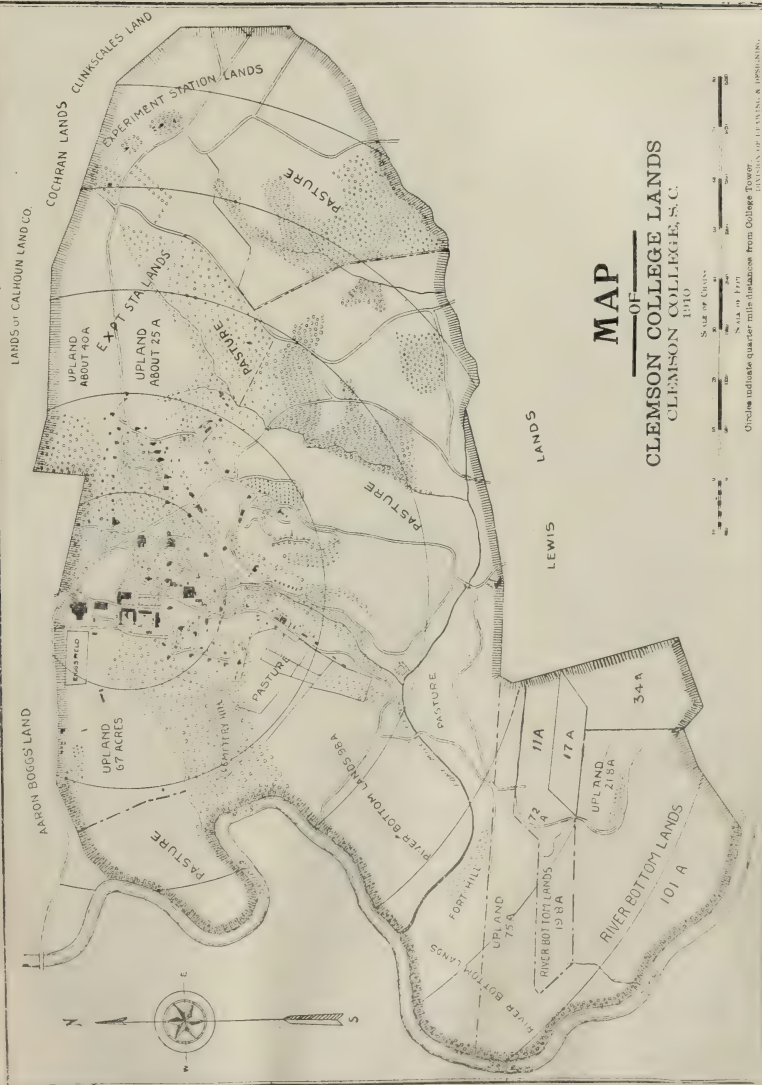
W. M. RIGGS,

President, Clemson Agricultural College.

P. S. As required by law, I present herewith a list of students who pay tuition, those who do not, and those who hold scholarships.

Attached also are reports of the following officers:

1. The Treasurer.
2. The Auditor.
3. The Board of Visitors.
4. The Director of Experiment Station.
5. The Director of Extension.
6. The Secretary of the Fertilizer Board.
7. The Chief Chemist.
8. The State Entomologist.
9. The State Veterinarian.
10. The Board's Findings in the Investigations of March 13th and April 8th.



CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|-----------------------------------|-----------------------------------|----------------------------------|
| Tripp, W. W., Easley, R. 4. | McGee, S. A., Starr. | Zeigler, F. M., Denmark. |
| Tripp, T. A., Easley, R. 4. | Rogers, J. B., Belton. | Barnwell County |
| Thompson, J. T., Anderson. | Wallace, A. B., Piedmont. | Pay Tuition |
| Smith, J. L., Anderson. | Wigington, J. T., Anderson. | Boylston, B. L., Blackville. |
| Smith, J. J., Starr. | Wiles, F. A., Honea Path. | Hair, A. B., Blackville. |
| Russell, B. A., Autun. | Woodcock, O. B., Pelzer. | Lee, A. P., Williston. |
| Power, R. M., Anderson. | Beneficiary | Lemon, A. N., Barnwell. |
| Welborn, N. L., Williamston. | Cannon, C. B., Honea Path. | Molair, W. L., Barnwell. |
| Webb, T. J., Anderson. | Farmer, E. F., Anderson. | Thompson, F. M., Williston. |
| Webb, J. H., Anderson. | Gaines, J. G., Honea Path. | Walker, J. M., Blackville. |
| Watson, L. F., Anderson, R. 1. | Garvin, J. E., Pendleton. | Willis, M. A., Williston. |
| Wallace, W. J., Anderson. | Garvin, P. M., Pendleton. | Free Tuition |
| Wilhite, F. T., Anderson. | King, R. F., Anderson, R. 1. | Armstrong, J. B., Barnwell. |
| Free Tuition | Martin, G. H., Anderson, R. 4. | Dyches, L. B., Blackville. |
| Beh, J. C., Anderson. | Martin, M. C., Anderson. | Beaufort County |
| Bigby, L. S., Williamston. | Bamberg County | Pay Tuition |
| Bowlan, T. G., Anderson. | Pay Tuition | Keyserling, H. L., Seabrook. |
| Crenshaw, J. C., Pelzer. | Cooke, J. D., Olar. | Keyserling, H. H., Beaufort. |
| Culbertson, J. A., Honea Path. | Jones, D. B., Bamberg. | Marscher, A. A., Beaufort. |
| Campbell, R. C., Pendleton. | Kirkland, J. M., Ehrhardt. | Peeples, Philip, Bluffton. |
| Davenport, O. F., Belton. | Millhouse, J. G., Olar. | Raney, E. D., Beaufort. |
| Duckworth, B. F., Anderson. | Neelev, J. E., Olar. | Ricker, G. F., Beaufort. |
| Dunlap, J. M., Honea Path. | Sojourner, D. P., Denmark. | Ricker, E. C., Beaufort. |
| Erskine, J. H., Anderson. | Sojourner, J. H., Denmark. | Worthington, W. C., Frogmore. |
| Griffin, C. W., Anderson. | Free Tuition | Free Tuition |
| Hubbard, W. B., Anderson. | Jones, B. B., Branchville. | Hiers, L. H., Beaufort. |
| McGee, R. F., Starr. | | |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|---------------------------------------|-------------------------------------|--|
| Berkeley County | Boylston, C. L., Charleston. | Newton, W. H., Charleston. |
| Pay Tuition | Bissell, J. J., Charleston. | Free Tuition |
| Villeponteaux, G. W., Cordesville. | Carr, A. F., Meggetts. | Bunch, E. T., Charleston. |
| Free Tuition | Carr, S. P., Meggetts. | Fraser, H. E., Mt. Pleasant. |
| Shuler, C. L., St. Stephens. | Cook, G. F., Charleston. | Givner, S., Charleston. |
| Beneficiary | Davis, G. E. R., Charleston. | Jenkins, E. M., Edisto Island. |
| Harvey, G. F., Pinopolis. | Davis, Ralph, Martins Point. | McCants, L. A., Mt. Pleasant. |
| Smith, D. P., Ridgeville. | Digner, C. A., Charleston. | O'Neill, B., Charleston. |
| Calhoun County | Denaro, J. M., Charleston. | Pinckney, J. S., Charleston. |
| Pay Tuition | Geraty, C. C., Yonges Island. | Ravenel, W. J., Charleston. |
| Banks, R. W., St. Matthews. | Geraty, J. W., Yonges Island. | Seabrook, E. M., Charleston. |
| Pearlstone, J. T., St. Matthews. | Grice, G. D., Charleston. | Sessions, B. G., McClellanville. |
| Sprigner, R. R., St. Matthews. | Laurey, H. E., Charleston. | Simmons, T. R., Charleston. |
| Stoudemire, L. C., Lone Star. | Martin, J. V., Charleston. | Smith, J. P., Charleston. |
| Summers, D. K., Cameron. | Mikell, I. J., Edisto Island. | Steinmeyer, G. E., Charleston. |
| Wimberly, L. B., St. Matthews. | Mikell, S. H., Edisto Island. | Beneficiary |
| Free Tuition | Morrison, W. M., McClellanville. | Bailey, E. M., Martins Point. |
| Banks, B. C., St. Matthews. | McGillivray, R. M., Charleston. | Leland, J. M., McClellanville. |
| Cauthen, H. W., Fort Motte. | Ohlandt, F. W., Charleston. | Linder, E. O., Adams Run. |
| Rast, W. M., St. Matthews. | Perry, F. T., Yonges Island. | Mitchell, C. A., Edisto Island. |
| Beneficiary | Riley, A. J., Charleston. | Townsend, J. C., Martins Point. |
| McGowan, W. D., Cameron. | Rittenberg, M. B., Charleston. | Walpole, B. L., Johns Island, R. 1. |
| Charleston County | Rivers, J. D., Charleston. | Whaley, E. C., Martins Point. |
| Pay Tuition | Rustin, R. B., Charleston. | Cherokee County |
| Allen, W. S., Charleston. | Schwettmann, F. W., Charleston. | Pay Tuition |
| | Seabrook, T. H., Charleston. | Allison, J. W., Blacksburg. |
| | Seabrook, O. F., Martins Point. | |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|--------------------------------|-----------------------------------|-----------------------------------|
| Fortenberry, R., Gaffney. | Refo, H. C., Chester. | Leland, R. E., McClellanville. |
| Inman, A. K., Wilkinsville. | Simpson, C. B., Richburg. | Richbourg, H. A., Summerton. |
| Sarratt, R. C., Gaffney. | Wade, G. L., Leeds. | Beneficiary |
| Spake, W. N., Gaffney. | Yarborough, J. H., Lowryville. | Felder, J. H., Silver. |
| Turner, T. P., Gaffney. | Beneficiary | Harvin, J. L., Pinewood. |
| | | Mahoney, W. M., Manning. |

Free Tuition

| | |
|------------------------------|---------------------------------|
| Haas, C. I., Gaffney. | Atkinson, L. A., Lowryville. |
| Haas, R. D., Gaffney. | Sanders, D. A., Richburg. |
| Smith, T. D., Blacksburg. | Simpson, T. L., Edgmoor. |
| | Stevenson, D. W., Richburg. |
| | Stevenson, R. A., Richburg. |
| | Stevenson, W. B., Richburg. |

Beneficiary

| | |
|-----------------------------|--|
| Huggins, C. B., Gaffney. | |
| Robbs, L. G., Gaffney. | |

Chester County

Pay Tuition

| | |
|----------------------------------|-------------------------------|
| Abernathy, W. H., Fort Lawn. | Gregory, G. W., Jefferson. |
| Anderson, E. T., Chester. | McArn, D. H., Cheraw. |
| Culp, C. L., Edgemoor. | Odom, W. H., Chesterfield. |
| Darby, J. E., Lowryville. | Free Tuition |
| Stevenson, H. F., Richburg. | Thrower, W. H., Cheraw. |
| Wade, W. M., Lowryville. | Beneficiary |
| Wooten, A. W., Lewis Turnout. | Gulledge, J. D., Ruby. |
| | Hartzell, G. W., Cheraw. |

Clarendon County

Pay Tuition

| | |
|---------------------------------|-----------------------------|
| Bankhead, J. M., Lowryville. | Barron, A. I., Manning. |
| Gage, G., Chester. | DuBose, R. E., Sardinia. |
| Melton, G. H., Chester. | Hodge, J. E., Manning. |

Colleton County

Pay Tuition

| |
|--------------------------------|
| Marvin, B., White Hall. |
| McGowan, J. L., Ehrhardt. |
| Sanders, H. M., Walterboro. |

Free Tuition

| |
|---------------------------------|
| Breland, E. P., Ruffin. |
| DuRant, C. O., Cottageville. |

Beneficiary

| |
|---------------------------------|
| Breland, E. M., Walterboro. |
| DuRant, A. L., Cottageville. |
| Willis, H. A., White Hall. |

Darlington County

Pay Tuition

| |
|------------------------------------|
| Anderson, O. W., Timmons ville. |
| Byrd, D. A., Society Hill. |
| Conder, H. W., Darlington. |
| DeWitt, A., Darlington. |
| DuBose, Glen, Lamar. |
| Fields, O. R., Lydia. |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|------------------------------------|-------------------------------------|----------------------------------|
| Gandy, J. M., Hartsville. | Atkins, M. T., Latta. | Spearman, J. H., Trenton. |
| Jordan, E. B., Lamar. | McMillan, S. E., Latta. | Fairfield County |
| King, H. M., Hartsville. | Free Tuition | Pay Tuition |
| Perritt, L. G., Lamar. | Hamilton, S. S., Dillon. | Hardin, W. R., Winnsboro. |
| Tillotson, W. E., Hartsville. | LeGette, M. A., Latta. | Jones, M. L., Longtown. |
| Sumner, J. P., Hartsville. | Rogers, J. W., Dillon. | Leitner, J. W. Bookman, |
| Sompayrac, H. P., Society Hill, | Dorchester County | Leitner, W. W., Bookman, |
| Winters, F. L., Mont Clare. | Pay Tuition | McEachern, D. M., Longtown. |
| Woodham, B. G., Hartsville. | Ackerman, T. H., St. George. | McMeekin, T. R., Alston. |
| Free Tuition | Cordes, H. D., Summerville. | McMeekin, S. C., Alston. |
| Auten, J. F., Hartsville. | Free Tuition | McMeekin, F. R., Monticello. |
| Banks, M. L., Hartsville. | Allen, A. N., Summerville. | McMeekin, T. L., Monticello. |
| Banks, W. D., Hartsville. | Manigault, E. L., Summerville. | Shedd, R. R., Monticello. |
| Boone, S. C., Hartsville. | Vaight, J. P., Summerville. | Free Tuition |
| Calhoun, C. F., Dovesville. | Beneficiary | Cathcart, A. B., Winnsboro. |
| Carpenter, J. R., Hartsville. | Henry, J. A., St. George. | Cathcart, R. S., Winnsboro. |
| DuRant, C. L., Mont Clare. | Minus, P. M., St. George. | Cathcart, S. L., Winnsboro. |
| Hoffmeyer, H. F. L., Florence. | Edgefield County | Dunlap, W. M., Rockton. |
| Beneficiary | Pay Tuition | Stevenson, C. A., Winnsboro. |
| Butler, C. M., Hartsville. | Hollingsworth, W. S., Edgefield. | Beneficiary |
| Byrnes, T. H., Hartsville. | Mathis, W. B., Colliers. | Harvey, S. A., Woodward. |
| Dunlap, M. T., Hartsville. | Mavs, F. L., Edgefield. | Nicholson, S. W., Woodward. |
| Stokes, C. H., Timmons ville. | Thurmond, J. S., Edgefield. | Florence County |
| Dillon County | Free Tuition | Pay Tuition |
| Pay Tuition | Adams, J. R., Colliers. | Benton, L. L., Timmons ville. |
| Alford, M. C., Latta. | | Divine, H. W., Florence. |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|-----------------------------------|--|--|
| Epps, A. R., Lake City. | Brooks, J. T., Fountain Inn. | Berry, J. H., Greenville. |
| Huggins, C., Timmons ville. | Brooks, H. C., Fountain Inn. | Berry, W. E., Greenville. |
| Lawhon, W. B., Timmons ville. | Cannon, V. L., Simpsonville. | Chapman, C. F., Pelzer. |
| Matthews, S. C., Scranton. | Cooper, T. B., Greenville, S. R. 4. | Chapman, R. C., Pelzer. |
| Smith, J. H., Timmons ville. | Cunningham, J. L., Greer. | Duckett, L. L., Fountain Inn. |
| Free Tuition | Cooper, J. L., Greenville, R. 4. | Ellis, J. W., Greenville. |
| Eaddy, Z. L., Hemmingway. | Davis, E. P., Greenville. | Givens, J. W., Fountain Inn. |
| Garner, J. F., Timmons ville. | Dawes, H. L., Greenville. | Gilmer, G. G., Greenville. |
| McKenzie, M. A., Lake City. | Dillard, R. L., Greer. | Going, O. F., Greenville. |
| Stanley, G. A., Bannockburn. | Ellis, W. J., Greenville. | Hellams, J. I., Travelers Rest. |
| Beneficiary | Farrell, J. G., Greenville. | McKinney, A. J., Greenville. |
| Hinson, I. L., Scranton. | Gilfillin, J. M., Greenville. | Parkins, D. F., Greenville. |
| Hinson, H. L., Scranton. | Goldsmith, J. M., Greenville. | Scott, V. M., Simpsonville. |
| Sansbury, L. S., Bannockburn. | Goldsmith, Wm., Greenville. | Beneficiary |
| Stanley, R. E., Bannockburn. | Gower, A. G., Greenville. | Carr, D. L., Piedmont, R. 3. |
| Georgetown County | Hendrix, W. B., Greenville, R. 6. | Lottis, C. B., Travelers Rest. |
| Pay Tuition | Marshall, Dan, Greenville, R. 3. | Kilgore, A. R., Simpsonville, R. 2. |
| Rosa, J. R., Georgetown. | McHugh, J. F., Greenville. | Hendricks, C. T., Taylor. |
| Wilson, D. I., Oakes. | Perry, F. M., Greenville. | Poole, J. C., Travelers Rest. |
| Free Tuition | Reese, M. R., Greer, R. 3. | Sprouse, J. C., Fountain Inn. |
| Bailey, R. W., Andrews. | Smith, C. E., Greenville. | Sloan, S. R., Simpsonville. |
| Greenville County | Smith, J. S., Greenville. | Wingo, W. P., Campobello. |
| Pay Tuition | Smythe, E. A., Greenville. | Greenwood County. |
| Armstrong, H., Fountain Inn. | Turner, H. R., Greenville. | Pay Tuition |
| Ballentine, W. L., Greenville. | Wade, J. L., Greenville. | Barksdale, D. B., Greenwood. |
| Ballenger, W. M., Greer. | Free Tuition | Bryan, G. T., Greenwood. |
| | Bauman, J. H., Greenville. | Durst, J. W., Greenwood. |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|----------------------------------|------------------------------------|------------------------------------|
| Garrett, W. F., Greenwood. | Lightsey, L. M., Brunson. | Beneficiary |
| Graham, R. N., Hodges. | Peeples, M. L., Scotia. | Fripp, W. T., Tillman. |
| Muckenfuss, C. H., Hodges. | Rentz, N. G., Varnville. | Parnell, H. N., Gillisonville. |
| Payne, H. D., Ninety Six. | Riley, G. M., Garnett. | Kershaw County |
| Rasor, Andrew, Donalds. | Wiggins, E. C., Garnett. | Pay Tuition |
| Snead, C. B., Greenwood. | Free Tuition | Holly, A. F., Jefferson. |
| Stallworth, W. H., Gaines. | Carter, R. E., Varnville. | Nettles, H. E., Lugoff. |
| Warner, J. D., Greenwood. | Lawton, B. E., Garnett. | Williams, E. B., Lancaster. |
| Free Tuition | Miley, L., Brunson. | Free Tuition |
| Blake, R. S., Greenwood. | McFeer, J. C., Early Branch. | Guy, P. B., Camden. |
| Burnett, D. E., Greenwood. | Thomas, F. E., Hampton. | Johnstone, J. F., Liberty Hill. |
| Cothran, E., Greenwood. | Beneficiary | Rush, A. E., Camden. |
| Miller, W. H., Greenwood. | Bowers, H. A., Hampton. | Beneficiary |
| Roberts, W. J., Ninety Six. | Horry County | Richards, J. P., Liberty Hill. |
| Townsend, F. A., Ninety Six. | Pay Tuition | Trotter, J. W., Camden. |
| Beneficiary | Derham, E. M., Greensea. | Lancaster County |
| Allen, F. M., Greenwood. | Lewis, J. G., 2nd., Aymor. | Pay Tuition |
| Martin, F. G., Ninety Six. | Free Tuition | Bailes, J. P., Fort Mill. |
| Martin, G. C., Ninety Six. | Altman, D. M., Galivants Ferry. | Blackman, L. A., Heath Springs. |
| Proctor, W. G., Ninety Six. | Altman, H. S., Galivants Ferry. | Cook, W. C., Lancaster. |
| Woodle, H. A., Greenwood. | Long, J. M., Longs. | Cobb, J. O., Lancaster. |
| Young, C. T., Greenwood. | Beneficiary | Timmons, E. D., Heath Springs. |
| Hampton County | Smith, S. T., Conway. | Timmons, L. C., Heath Springs. |
| Pay Tuition | Graham, J. P., Conway. | Beneficiary |
| Gooding, P. H., Hampton R. 1. | Jasper County | Harris, O. P., Fort Mill. |
| Lawton, A. S., Garnett. | Pay Tuition | King, J. M., Lancaster. |
| Lawton, H. L., Lena. | Langford, T. A., Gillisonville. | |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|---------------------------------|------------------------------------|-------------------------------------|
| Patterson, C. E., Fort Mill. | Knight, A. J., Ware Shoals. | Non Tuition |
| Potts, R. C., Fort Mill. | Knight, O. J., Ware Shoals. | Dowling, J. A., Swansea. |
| Laurens County | Richbourg, S. E., Clinton | Miller, J. C., Lexington. |
| Pay Tuition. | Owens, J. C., Laurens. | Beneficiary |
| Boozar, W. M., Kinards. | Taylor, F. W., Fountain Inn. | Addy, C. S., Leesville. |
| Crisp, A. B., Mountville. | Wallace, N. L., Bryson. | Bachman, C. A., Swansea. |
| Clapp, W. J., Clinton. | Beneficiary | Roof, H. A., New Brookland. |
| Copeland, I. B., Renno. | McDaniel, G. E., Laurens, R. 4. | Wingard, L. E., Lexington. |
| Copeland, J. D., Renno. | Rogers, E. L., Gray Court. | Marion County |
| Clark, A. B., Gray Court. | Thomason, J. F., Gray Court. | Pay Tuition |
| Davis, W. G., Clinton. | Washington, W. H., Ware Shoals. | Ayers, E. E., Nichols. |
| Dial, F. A., Laurens. | Lee County | Bethea, J. P., Mullins. |
| Dunlap, J. H., Laurens. | Pay Tuition | Owens, C. A., Marion. |
| Dunlap, R. T., Laurens. | Betchman, H. B., Chapin. | Solomon, L., Marion. |
| Fuller, E. P., Laurens. | Fields, J. N., Lamar. | Wallace, H., Marion. |
| Gray, R. E., Gray Court. | Galloway, W. R., Lynchburg. | Non Tuition |
| Hunter, H. A., Clinton. | Krasnoff, L. I., Bishopville. | Baker, O. E., Nichols, R. 1. |
| Roper, C. P., Laurens. | Moore, W. E., Bishopville. | Hood, R. W., Mullins. |
| Roper, F. H., Laurens. | Non Tuition | LeGette, M. R., Centenary, R. 1. |
| Wilkes, E. H., Laurens. | McKenzie, W. J., Bishopville. | Mace, S. N., Centenary. |
| Wood, H. H., Princeton. | Lexington County | Marlboro County |
| Woodside, H. F., Laurens. | Pay Tuition | Pay Tuition |
| Free Tuition | Cullum, U. X., Batesburg. | Crosland, J. E., Bennettsville. |
| Armstrong, F. E., Laurens. | Dreher, C. A., Irmo. | Covington, O. F., Clio. |
| Cox, F. W., Gray Court. | Epting, C. V., Peak. | Crosland, A. D., Bennettsville. |
| Copeland, G. E., Renno. | Fink, B. L., Batesburg. | Crosland, M. E., Bennettsville. |
| Crisp, C. A., Laurens. | Hartley, R. L., Batesburg. | |
| Franks, C. H., Laurens. | | |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|------------------------------------|--------------------------------------|--|
| Fletcher, H. W., McColl. | Coleman, Dan, Chappells. | Martin, L. I., Westminster. |
| Hinson, H. C., Tatum. | Hipp, R., Pomaria. | Mills, W. H., Clemson College. |
| McLaurin, E. B., McColl. | Singley, H. S., Prosperity. | Moss, J. H., Walhalla. |
| McLaurin, J. F., McColl. | Wallace, F. H., Kinards. | McMahan, J., Richland. |
| Odom, G. F., McColl. | Werts, R. B., Newberry, R. 3. | Newman, A. S., Clemson College. |
| Sherrill, L. H., Bennettsville. | Wise, G. S., Prosperity. | Ravenel, D., Clemson College. |
| Smith, D. R., Clio. | Watkins, B. W., Chappells. | Schroder, J. H. F., Walhalla. |
| Non Tuition | Non Tuition | Schilleter, J. C., Clemson College. |
| Atkinson, C. A., Blenheim. | Farrow, D. S., Newberry. | Stribling, W. J., Walhalla. |
| Crosland, T. M., Bennettsville. | Mills, C. S., Prosperity. | Verner, J. V., Richland. |
| Miller, James, Bennettsville. | Pugh, W. C., Prosperity. | Non Tuition |
| Beneficiary | Schumpert, F. E., Prosperity. | Clemens, J. F., Clemson College. |
| Fletcher, L. A., Bennettsville. | Wheeler, H. B., Prosperity. | Carter, R. W., Westminster. |
| Howell, L. M., Bennettsville. | Beneficiary | Cobb, B. C., Walhalla. |
| McCormick County | Hunter, J. H., Prosperity. | Dickson, W. P., Seneca. |
| Pay Tuition | Mills, O. B., Prosperity. | Dorn, A. M., Westminster. |
| Britt, W. E., McCormick. | Oconee County | England, W. L., Westminster. |
| Bussey, J. C., Parksville. | Pay Tuition | Martin, S. M., Clemson College. |
| Covin, J. O., Wellington. | Barnett, R. M., Clemson College. | Mulky, H. B., Westminster. |
| Walker, A. R., McCormick. | Barron, C. H., Seneca. | Shiver, N. C., Clemson College. |
| Beneficiary | Burgess, T. H., Seneca. | Wilbanks, W. C., Clemson College. |
| Link, S. T., Abbeville. | Cary, J. L., Seneca. | Beneficiary |
| Newberry County | Davis, C. R., Fair Play. | Fant, G. W., Walhalla. |
| Pay Tuition | Dorn, W. L., Westminster. | Moore, W. D., Seneca. |
| Boozer, Lindley, Prosperity. | Ellison, C. H., Seneca. | Orangeburg County. |
| Connor, J. T., Newberry, R. 3. | Harrison, G. A., Walhalla. | Pay Tuition |
| | Hunter, S. C., Westminster, R. 1. | Barton, W. P., Orangeburg. |
| | | Dukes, W. A., Branchville. |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|----------------------------------|---------------------------------------|--------------------------------------|
| Evans, T. M., Elloree. | Koopman, J. J., Eutawville. | Non Tuition |
| Fairey, L. S., Branchville. | Lowman, P. I., Orangeburg. | Boggs, E. S., Liberty. |
| Gibson, J. W., Cordova. | Parler, S. B., Elloree. | Boggs, L. K., Liberty. |
| Gilmore, W. D., Orangeburg. | Sally, S. A., Orangeburg. | Freeman, J. L., Pickens. |
| Mackay, M. S., Orangeburg. | Thompson, E. A., Reevesville. | Kay, L. R., Easley. |
| Martin, N. W., Springfield. | Traxler, D. W., Bowman. | Merck, W. L., Calhoun. |
| Miley, J. N., Branchville. | Vincent, C. E., Orangeburg. | Richbourg, E. B., Liberty. |
| Patrick, G. B., Bowman. | Wolf, F. U., North. | Yongue, C., Pickens. |
| Robinson, E. E., Rowesville. | Beneficiary | Beneficiary |
| Smoak, L. G., Cope. | Funchess, W. H., Rowesville. | Arnold, L. W., Central. |
| Sally, H. B., Sally. | Hungerpillar, R. M., Orangeburg. | Jones, J. D., Liberty. |
| Savage, E. B., Eutawville. | Myers, M. S., Branchville. | Middleton, W. S., Clemson College |
| Simmons, K. B., Rowesville. | Rickenbaker, T. D., Bowman. | Richland County |
| Simmons, T. D., Rowesville. | Whittaker, W. L., Orangeburg. | Pay Tuition |
| Smith, T. S., Springfield. | Pickens County | Bates, H. G., Eastover. |
| Till, J. B., Orangeburg. | Pay Tuition | Coleman, R. L., Hopkins. |
| Till, J. F., Orangeburg. | Freeman, J. F., Pickens. | Coles, A. P., Columbia. |
| Till, N. R., Orangeburg. | Gaines, H. I., Central. | Childs, L. H., Columbia. |
| Tindall, L. N., Vance. | Hendricks, D., Easley. | Coleman, E. B., Eastover. |
| Thackston, L. P., Orangeburg. | Jones, E. C., Easley. | Chappell, L. C., Lykesland. |
| Thomas, R. R., Cope. | Kay, A. E., Easley. | Ford, C. R., Columbia. |
| Whetstone, O. F., Rowesville. | McHugh, J. B., Clemson College. | Hollowell, J. G., Columbia. |
| Weeks, J. L., Orangeburg. | Robertson, B. F., Clemson College. | Hollowell, J. R., Columbia. |
| Zeigler, T. J., Cope. | Smith, G. F., Liberty. | Hopkins, T. J., James Crossing. |
| Non Tuition | Tate, R. W., Norris. | Jones, H. J., Congaree. |
| Goodwin, W. M., Jameson. | Watkins, W. W., Easley. | Lachicotte, L. H., Columbia. |
| Inabinet, J. W., Bowman. | Williams, Ned, Easley. | Madden, L. E., Columbia. |
| Kennedy, H. H., Orangeburg. | Wyatt, W. F., Easley. | Price, G. D., Eastover. |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|---------------------------------------|------------------------------------|---------------------------------|
| Rawlinson, G. S., Eastover. | Non Tuition | Smith, R., Spartanburg. |
| Rice, J. A., Columbia. | Merchant, V. E., Chappells. | West, H. J., White Stone. |
| Robinson, H. B., Columbia. | Stanford, H., Leesville. | |
| Rodgers, W. S., Columbia. | Spartanburg County. | Non Tuition |
| Schoobred, A., Columbia. | Ally, W. H., Spartanburg. | Bishop, W. G., Inman. |
| Stork, R. B., Columbia. | Baynard, W. L., Landrum. | Dula, A. H., Spartanburg. |
| Stork, R. C., Columbia. | Ballenger, A. R., Wellford. | Foster, G. E., Inman. |
| Walters, D. E., Columbia. | Cannon, W. S., Spartanburg. | Freeman, E. J., Spartanburg. |
| Yates, A. M., Lykesland. | Clyde, P. M., Spartanburg. | Freeman, R. A., Spartanburg. |
| | Dean, G. B., Spartanburg. | Harris, J. E., Spartanburg. |
| Non Tuition | Dunbar, J. Y., Spartanburg. | High, J. M., Campobello. |
| Driggers, B. F., Columbia. | Fitzgerald, J. B., Spartanburg. | Hines, W. E., Spartanburg. |
| Eleazer, L. H., Chapin. | Foster, H. M., Roebuck. | Mawbry, W. L., Spartanburg. |
| Kelly, H. C., Congaree. | Friday, R. M., Spartanburg. | Sams, R. H., Spartanburg. |
| Killian, J. M., Columbia. | Gray, W. H., Woodruff. | Shands, E. H., Campobello. |
| McCarley, J. F., Columbia. | Gwin, M. H., Woodruff. | Thorne, J. E., Chesnee. |
| Beneficiary | Hagood, W. M., Spartanburg. | Vaughn, T. L., Greer. |
| Hoffman, M. B., Blythewood. | Halstead, Thomas, Spartanburg. | Walker, H. C., Spartanburg. |
| Langford, G. S., Blythewood. | Heffner, L. B., Spartanburg. | |
| Rawl, E. H., Columbia. | Hendricks, T. G., Duncan. | Beneficiary |
| Smith, M. C., Hopkins. | Hines, J. E., Spartanburg. | Carver, W. A., Fairforest. |
| Caluda County | Johnson, H. L., Spartanburg. | Finger, B. L., Fingerville. |
| Pay Tuition | Kirkpatrick, J. W., Pacolet. | Morgan, T. W., Wellford. |
| Coleman, J. V., Silver Street. | Manning, T. C., Spartanburg. | Odell, J. H., Spartanburg. |
| Kemson, J. M., Silver Street. | Sams, M. W., Spartanburg. | Smith, C. D., Spartanburg. |
| Quattlebaum, C. A., Ridge Springs. | Scruggs, J. L., Spartanburg. | |
| Waters, P. B., Saluda. | Smith, A. P., Pauline. | Sumter County |
| Wise, P. N., Batesburg. | | Pay Tuition |
| | | Brown, J. B., Oswego. |
| | | Dinkins, J. D., Sumter. |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|----------------------------------|-----------------------------------|--|
| Dwight, R. C., Wedgeville. | Crawford, E. L., Jonesville. | Non Tuition Steele, H., Kingstree. |
| Emmanuel, E. H., Bowden. | Fowler, W. W., Jonesville. | Beneficiary McKnight, L., Andrews. |
| Pitts, L. A., Sumter. | Haas, H. P., Union. | |
| Robinson, M. M., Oswego. | Jeffries, E. E., Union. | York County |
| Ryan, F. R., Wedgeville. | Jeter, M. C., Santuc. | Pay Tuition |
| Ryan, M. S., Wedgeville. | Langston, J. L., Buffalo. | Blankenship, A. S., Fort Mill. |
| Sanders, C. W., Hagood. | Littlejohn, B. C., Jonesville. | Brice, R. W., York, R. 4. |
| Truluck, J. P., Motbridge. | Vanderford, F. M., Union. | Byers, W. B., Rock Hill. |
| Wells, W. R., Sumter, R. 5. | Young, J. L., Union. | Campbell, S. W., Tirzah. |
| Wright, E. D., Wedgfield. | | Faires, M. S., Rock Hill. |
| Non Tuition | Non Tuition | Gettys, E. F., York, R. 7. |
| Cain, O. W., Sumter, R. 2. | Harris, H. S., Union. | Kinard, J. P., Rock Hill. |
| Hammond, J. A., Sumter. | Howell, R. E., Buffalo. | Logan, F. R., York. |
| Mays, T. P., Mayesville. | McWhirter, C. L., Jonesville. | Love, Wm. A., McConnellsville. |
| Mellett, R. S., Sumter, R. 3. | Rice, S. C., Union. | Mackorell, T. M., York. |
| Parker, J. M., Sumter. | Williams, E. W., Jonesville. | Nichols, J. L., Rock Hill. |
| Randle, M. B., Sumter. | Beneficiary | Quinn, J. W., York. |
| Truluck, T. D., Lynchburg. | Bishop, R. T., Sedalia. | Poe, O. S., Rock Hill. |
| Beneficiary | Jeter, H. D., Santuc. | Smarr, R. G., Bullock Creek. |
| Dwight, F. M., Wedgeville. | Murphy, W. B., Union. | Stewart, J. M., Rock Hill. |
| Kolb, R. F., Sumter. | Thornton, M., Lockhart. | Smith, E. W., Hickory Grove. |
| Ramsey, W. H., Wedgeville. | Williamsburg County. | Wray, A. F., York. |
| Ryan, J. H., Wedgeville. | Pay Tuition | Whiteside, H. S., Hickory Grove. |
| Union County | Burgess, J. K., Kingstree. | |
| Pay Tuition | Davis, I. E., Salters Depot. | Non Tuition |
| Betsil, J. L., Union. | McCullough, T. G., Kingstree. | Bratton, R. B., McConnellsville. |
| Calvert, B. A., Jonesville. | O'Bryan, M. B., Heineman. | Draffin, J. W., Leslie. |
| Calvert, L. F., Jonesville. | Rhem, C. F., Rhems. | Erwin, R. M., Fort Mill. |
| | Snow, J. J., Henry. | Frew, W. L., Rock Hill. |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

| | | |
|---------------------------------|-----------------------------|-----------------------------|
| Fudge, B. R., Rock Hill. | Walsh, J. N., York. | Hayes, S. J., Fort Mill. |
| Garrison, F. B., York, R. 3. | Beneficiary | Horton, L. F., Sharon. |
| Plexico, P. G., Rock Hill. | Barnett, J. L., Clover. | Robinson, H. E., Sharon. |
| Poag, C. W., Rock Hill. | Erwin, W. J., Fort Mill. | |
| Stone, O. G., Clover. | Grier, W. H., Fort Mill. | |

Non Residents

| | | |
|--|---|---------------------------------------|
| Alford, H. P., Rowland, N. C. | Lucas, T. T., Charlotte, N. C. | Tate, H. F., Union Mills, N. C. |
| Bond, H. P. N., Savannah, Ga. | Marler, R. H., Winston Salem, N. C. | Taylor, F. E., Macon, Ga. |
| Brown, C. M., Charlotte, N. C. | Melson, H. R., Carrollton, Ga. | Taylor, T., Savannah, Ga. |
| Bryan, C. J., Dewey Rose, Ga. | Miller, H. E., Claxton, Ga. | Thompson, R. L., Hallsboro, N. C. |
| Colbert, W. C., Ardmore, Okla. | McDonald, W. S., Gainesville, Fla. | Till, H. F., Jacksonville, Fla. |
| DeLoach, C. E., Claxton, Ga. | McGee, G. W., Houston, Texas. | Townsend, D. E., McDonalds, N. C., |
| Dunham, F. E., Palm Beach, Fla. | McGougan, J. B., Tabor, N. C. | Vincient, J. C., Macon, Ga. |
| Graham, G. B., Charlotte, N. C. | Redfern, W. M., Wadesboro, N. C. | Vogel, T. R., Washington, D. C. |
| Hadlow, F. N., Jacksonville, Fla. | Robbins, J. R., Marion, Ala. | White, V. R., Melbane, N. C. |
| Hagood, E. W., Jacksonville, Fla. | Schenck, J. R., Greensboro, N. C. | Williams, J. S., Washington, D. C. |
| Henriquez, C. I., Jamaica, B. W. I. | Snead, A. K., Carrollton, Ga. | Willians, M. H., Washington, D. C. |
| Jackson, T. S., Thomason, Ga. | Spoon, L. P., Pontiac, Mich. | Yeomans, M. S., Dawson, Ga. |

Report of The Treasurer For The Fiscal Year July 1, 1919, to June 30, 1920

RESOURCES

DR.

Income—

| | | |
|---------------------------------------|--------------|--------------|
| Privilege Fertilizer Tax ----- | \$313,472.54 | |
| Interest on Clemson Bequest ----- | 3,512.36 | |
| Interest on Landscrip ----- | 5,754.00 | |
| Morrill and Nelson Fund (U. S.) ----- | 25,000.00 | |
| Tuition from Cadets ----- | 17,472.83 | |
| Sales, Interest, Rents, etc. ----- | 23,210.84 | \$388,422.57 |

EXPENDITURES

CR.

Public Service—

| | | |
|--------------------------------------|--------------|--------------|
| Scholarships and Advertisements ---- | \$ 13,151.32 | |
| Coast Experiment Station ----- | 2,973.35 | |
| Crop Pest Commission ----- | 4,329.88 | |
| Fertilizer Analysis ----- | 12,250.06 | |
| Fertilizer Inspection ----- | 29,445.94 | |
| Miscellaneous Public Service ----- | 1,292.58 | |
| Pee Dee Experiment Station ----- | 3,832.58 | |
| S. C. Experiment Station ----- | 2,671.84 | |
| Veterinary Inspection ----- | 5,100.55 | \$ 75,048.10 |

College Operating Expenses—

| | | |
|---|--------------|--------------|
| Salaries, Labor, Coal, Materials, etc. -- | | \$214,470.51 |
| Equipment for Teaching ----- | \$ 10,672.08 | |
| Improvements and Additions to Plant-- | 32,774.08 | 43,446.16 |
| Building Sinking Fund for Hospital and Tile Floor in Mess Hall ----- | 55,457.80 | 55,457.80 |
| Total ----- | | \$388,422.57 |

The following is a more detailed statement, showing the Expenditures and Cost of the Public State Work, and each Department and Division of the College, under the items appropriated by the Board of Trustees:

PUBLIC STATE WORK DEPARTMENT

Scholarships and Advertisements—

Scholarships and Advertisements ----\$ 13,151.32—\$ 13,151.32

Coast Experiments—

| | |
|---|--------------------|
| Salary of Superintendent ----- | \$ 1,586.62 |
| Forestry Experiments ----- | 61.75 |
| Orchard and Vineyard Experiments --- | 82.43 |
| Hog Grazing Experiments ----- | 30.85 |
| Labor on Ornamental Grounds ----- | 22.50 |
| Labor ----- | 188.23 |
| Repairing Fences and Sheds ----- | 138.38 |
| Tools and Implements ----- | 100.98 |
| Farm and Shop Equipment ----- | 126.39 |
| Materials for Extending Vineyards and Orchards ----- | 68.66 |
| Beef Cattle for Grazing Tests ----- | 336.94 |
| Experimental Pastures ----- | 104.62 |
| Installing Power Plant and Wiring House and Barn ----- | 125.00—\$ 2,973.35 |

Crop Pest Commission—

| | |
|--|--------------------|
| Salaries ----- | \$ 2,870.00 |
| Labor ----- | 560.00 |
| Expenses of Entomologist and Assist'ts | 730.11 |
| Office Supplies, Telegrams, etc. ----- | 169.77—\$ 4,329.88 |

Fertilizer Analysis—

| | |
|--|---------------------|
| Salaries ----- | \$ 8,680.00 |
| Apparatus ----- | 275.79 |
| Chemicals ----- | 861.13 |
| Gasoline ----- | 400.00 |
| Record Books, Postage Stationery --- | 139.45 |
| Incidentals ----- | 47.31 |
| Labor—Janitor ----- | 240.00 |
| Extra Help in Laboratory and Office -- | 300.00 |
| Emergency Supplies, Labor, etc. ----- | 558.86 |
| Traveling Expenses ----- | 147.52 |
| Extra Services (Foy and Freeman) --- | 600.00—\$ 12,250.06 |

Fertilizer Inspection—

| | | | |
|---|----|-----------|--------------|
| Salaries ----- | \$ | 3,723.92 | |
| Labor—Janitor ----- | | 515.00 | |
| Tags and Printing ----- | | 11,864.50 | |
| Pay and Travel of 13 Inspectors ----- | | 11,581.65 | |
| Printing and Mailing Weekly Bulletins ----- | | 135.37 | |
| Freight, Postage and Incidentals ----- | | 686.94 | |
| Legal Services ----- | | 250.00 | |
| Condensed Fertilizer Bulletin ----- | | 512.92 | |
| Inspector's Cases, Trunks, etc. ----- | | 120.00 | |
| Office Furniture and Fixtures ----- | | 42.00 | |
| Expenses of Commission ----- | | 13.64 | \$ 29,445.94 |

Miscellaneous State Work—

| | | | |
|---|----|--------|-------------|
| Contrib. to Expenses Local School ----- | \$ | 550.00 | |
| Summer School ----- | | 328.40 | |
| Salary Agricultural Editor (Bryan) -- | | 174.96 | |
| State Fair Exhibit ----- | | 239.22 | \$ 1,292.58 |

Pee Dee Experiment Station—

| | | | |
|------------------------------------|----|----------|-------------|
| Salary Superintendent ----- | \$ | 1,586.62 | |
| Graduate Student Assistant ----- | | 150.00 | |
| Horticultural Work ----- | | 98.66 | |
| Tools and Implements ----- | | 136.53 | |
| Hog Pastures ----- | | 29.31 | |
| Rat Proof Corn Barn ----- | | 883.59 | |
| Office and Seed Storage Room ----- | | 947.87 | \$ 3,832.58 |

South Carolina Experiment Station—

| | | | |
|--|----|----------|-------------|
| Travel to Sub-stations ----- | \$ | 431.74 | |
| Attending Conventions ----- | | 116.39 | |
| Travel and Other Expenses Incident to War Emergency Board of Plant Pathology ----- | | 87.13 | |
| Publication of Bulletins ----- | | 172.50 | |
| Breeding Projects ----- | | 1,864.08 | \$ 2,671.84 |

Veterinary Inspection—

| | | | |
|---|----|----------|-------------|
| Salaries ----- | \$ | 4,041.03 | |
| Travel, Printing and Office Equipment ----- | | 872.95 | |
| Graduate Student Assistant ----- | | 186.57 | \$ 5,100.55 |

| | | |
|--------------------------------------|--|--------------|
| Public State Work Expenditures ----- | | \$ 75,048.10 |
|--------------------------------------|--|--------------|

ACADEMIC DEPARTMENT**English Division—**

| | | | |
|----------------------------|----|----------|-------|
| Stationery, etc. ----- | \$ | 11.25 | |
| Dictionary and Stand ----- | | 16.00—\$ | 27.25 |

History Division—

| | | | |
|---------------------------------|----|----------|-------|
| Periodicals for Classroom ----- | \$ | 36.25 | |
| Maps and Reference Books ----- | | 58.47—\$ | 94.72 |

Mathematics Division—

| | | | |
|--------------------------------------|----|--------|-----|
| Repairs to Furniture and Equipment-- | \$ | .40—\$ | .40 |
|--------------------------------------|----|--------|-----|

Office and Unclassified Division—

| | | | |
|--|----|-----------|--------|
| Labor—Two Janitors ----- | \$ | 644.75 | |
| Chalk, Erasers, Brooms, Stationery --- | | 135.86—\$ | 780.61 |

Physics Division—

| | | | |
|---------------------------------------|----|----------|----------|
| Laboratory Supplies and Repairs ----- | \$ | 139.33 | |
| Apparatus for Mechanics and Heat --- | | 146.57 | |
| Apparatus for Light and Sound ----- | | 62.47 | |
| Appar. for Elec. and Magnetism ----- | | 340.73 | |
| Astronomical Telescope ----- | | 301.98 | |
| Sextant, Chart, etc. ----- | | 34.00 | |
| Instrument Cases ----- | | 70.50—\$ | 1,095.58 |

Salaries—

| | | | |
|---------------------------------------|----|--------------|-----------|
| Salaries—Professors and Assistants -- | \$ | 35,828.15—\$ | 35,828.15 |
|---------------------------------------|----|--------------|-----------|

| | | | |
|---------------------------------|--|----|-----------|
| Departmental Expenditures ----- | | \$ | 37,826.71 |
|---------------------------------|--|----|-----------|

AGRICULTURAL DEPARTMENT**Agricultural Education Division—**

| | | | |
|----------------------------|----|-----------|--------|
| Typewriter ----- | \$ | 65.53 | |
| Office Furniture ----- | | 224.50 | |
| Classroom Equipment ----- | | 143.86 | |
| Mimeograph Machine ----- | | 85.00 | |
| Laboratory Equipment ----- | | 198.00—\$ | 716.89 |

Agronomy Division—

| | | | |
|--------------------------------------|----|-------------|----------|
| Cement, Gasoline, Oil, etc. ----- | \$ | 209.62 | |
| Seed, Score Cards, etc. ----- | | 89.32 | |
| Repairs and Parts for Machines ----- | | 22.00 | |
| Materials for Class Work ----- | | 100.00 | |
| Cement, Gasoline, Oil, etc. ----- | | 99.17 | |
| Laboratory Equipment ----- | | 200.00 | |
| Office Equipment ----- | | 50.00 | |
| Machines for Farm Laboratory ----- | | 1,173.56—\$ | 1,943.67 |

Animal Husbandry Division—

| | | | |
|------------------------------------|-------------|--------|----------|
| Repairs to Fences ----- | \$ | 200.00 | |
| Labor, Fertilizer, etc. ----- | | 500.00 | |
| Live Stock Registration Book ----- | | 25.00 | |
| Lantern Slides ----- | | 40.00 | |
| Classroom Equipment ----- | | 81.48 | |
| Purebred Swine ----- | 4,074.04—\$ | | 5,320.52 |

Botany and Bacteriology Division—

| | | | |
|--------------------------------------|----------|--------|----------|
| Botanical Publications ----- | \$ | 97.21 | |
| Glassware and Laboratory Supplies -- | | 405.86 | |
| Collecting Materials ----- | | 42.69 | |
| Graduate Student Assistant ----- | | 250.00 | |
| Repairs and Replacements ----- | | 81.30 | |
| Microscopes ----- | | 399.29 | |
| Physiological Apparatus ----- | | 245.65 | |
| Student Lockers ----- | | 100.00 | |
| Microscope Cabinet ----- | | 21.85 | |
| Timber Treatment Plant ----- | 55.50—\$ | | 1,699.35 |

Dairy Division—

| | | | |
|------------------------------------|-----------|--------|----------|
| Janitor and Janitor Supplies ----- | \$ | 367.45 | |
| Freight and Repairs ----- | | 36.73 | |
| Glassware and Chemicals ----- | | 116.22 | |
| Labor and Operating Expenses ----- | | 50.08 | |
| Upkeep of Fences ----- | | 147.60 | |
| Small Laboratory Equipment ----- | | 68.77 | |
| Two Butter Moisture Testers ----- | | 44.75 | |
| Calf Barn Equipment ----- | 526.74—\$ | | 1,358.34 |

Entomology and Zoology Division—

| | | | |
|--------------------------------------|----------|--------|--------|
| Class and Laboratory Materials ----- | \$ | 98.54 | |
| Labor ----- | | 105.19 | |
| Repairs to Instruments ----- | | 97.67 | |
| Spray Apparatus ----- | | 99.61 | |
| Part Payment—Refrigerating Plant -- | 75.00—\$ | | 476.01 |

Geology and Mineralogy Division—

| | | | |
|---|----------|-------|--------|
| Chemicals and Laboratory Supplies and Repairs ----- | \$ | 56.61 | |
| Labor ----- | | 6.01 | |
| Photographic Maps ----- | 53.49—\$ | | 116.11 |

Horticultural Division—

| | | | |
|---------------------------|----|----------|--|
| Labor ----- | \$ | 1,701.13 | |
| Fertilizer ----- | | 98.58 | |
| Seeds, Plants, etc. ----- | | 199.18 | |

| | | |
|--|----------|----------|
| Greenhouse Supplies and Repairs ----- | 96.98 | |
| Coal for Greenhouse ----- | 90.82 | |
| Spray Apparatus and Materials ----- | 74.35 | |
| Feed for Two Mules ----- | 296.64 | |
| Tools for Class Use ----- | 74.13 | |
| Replacing Plants in Greenhouse ----- | 99.33 | |
| Chairs and Tables for Laboratory ----- | 75.00 | |
| Blackboard for Class Use ----- | 25.00—\$ | 2,831.14 |

Office and Unclassified Division—

| | | | |
|---------------------------------------|----|----------|----------|
| Janitor ----- | \$ | 338.20 | |
| Janitor's Supplies ----- | | 148.91 | |
| Gasoline ----- | | 159.10 | |
| Attendance on Conventions, etc. ----- | | 19.78 | |
| Stationery, Postage, etc. ----- | | 625.00 | |
| Upkeep of Building ----- | | 148.89 | |
| Stand for Mimeograph Machine ----- | | 17.25 | |
| Shades ----- | | 76.50 | |
| Filing Cases ----- | | 26.75—\$ | 1,560.38 |

Poultry Husbandry Division—

| | | | |
|----------------|----|-----------|--------|
| Labor ----- | \$ | 450.00 | |
| Feed ----- | | 248.77 | |
| Supplies ----- | | 143.06—\$ | 841.83 |

Soils Division—

| | | | |
|--|----|-----------|----------|
| Supplies and Small Apparatus ----- | \$ | 98.93 | |
| Balances, Digesting Shelves, Shaking Apparatus, etc. ----- | | 791.96 | |
| Small Apparatus ----- | | 398.33—\$ | 1,289.22 |

Veterinary Science Division—

| | | | |
|---------------------------------------|----|---------|--------|
| Janitor and Extra Labor ----- | \$ | 383.00 | |
| Coal ----- | | 30.98 | |
| Laboratory Supplies for Class Work -- | | 100.00 | |
| Animals for Dissecting ----- | | 73.93 | |
| Repairs and Replacements of Appar. - | | 49.35 | |
| Veterinary Journals ----- | | 3.00—\$ | 640.26 |

Salaries—

| | | | |
|---------------------------------------|----|--------------|-----------|
| Salaries—Professors and Assistants -- | \$ | 32,415.19—\$ | 32,415.19 |
|---------------------------------------|----|--------------|-----------|

| | | | |
|---------------------------------|--|----|-----------|
| Departmental Expenditures ----- | | \$ | 51,208.91 |
|---------------------------------|--|----|-----------|

CHEMICAL DEPARTMENT

Chemistry Division—

| | | | |
|------------------------------------|----|----------|----------|
| Apparatus ----- | \$ | 940.91 | |
| Chemicals and Supplies ----- | | 449.75 | |
| Gasoline ----- | | 250.00 | |
| Books, Journals and Bindings ----- | | 83.40 | |
| Repairs to Apparatus ----- | | 170.13 | |
| Incidentals ----- | | 98.56 | |
| Labor—Janitor ----- | | 215.00 | |
| Repairs to Plumbing ----- | | 49.40—\$ | 2,257.15 |

Salaries—

| | | | |
|---------------------------------------|----|-------------|----------|
| Salaries—Professors and Assistants -- | \$ | 8,689.24—\$ | 8,689.24 |
|---------------------------------------|----|-------------|----------|

| | | | |
|---------------------------------|--|--|--------------|
| Departmental Expenditures ----- | | | \$ 10,946.39 |
|---------------------------------|--|--|--------------|

ENGINEERING DEPARTMENT

Civil Engineering Division—

| | | | |
|--|----|----------|----------|
| Class Materials, etc. ----- | \$ | 39.72 | |
| Repairs and Replacements to Instru- ments and Furniture ----- | | 37.52 | |
| Additional Cases in Instrument Room ----- | | 100.00 | |
| Cement Tools ----- | | 49.71 | |
| Equipment for Testing Road Materials ----- | | 500.00 | |
| Freight on Nash Truck ----- | | 286.34 | |
| Body for Nash Truck ----- | | 30.00—\$ | 1,043.29 |

Drawing Division—

| | | | |
|---------------------------------------|----|----------|--------|
| Materials as ink, paper, etc. ----- | \$ | 60.01 | |
| Repairs and Renewals of Apparatus -- | | 60.00 | |
| Expenses of Architectural Contest --- | | 25.00 | |
| Subscr. to Architectural Magazines -- | | 55.00 | |
| Reference Books ----- | | 146.39 | |
| Labor and Lights ----- | | 70.00—\$ | 416.40 |

Electrical Engineering—

| | | | |
|--|----|--------|--|
| Junior Laboratory Supplies ----- | \$ | 50.17 | |
| Senior Laboratory Supplies ----- | | 60.00 | |
| Repairs and Renewals ----- | | 104.98 | |
| Class and Lab. Notes for Students ---- | | 29.95 | |
| Student Assistant ----- | | 96.75 | |
| Freight on Machinery ----- | | 38.34 | |
| Machine Bases and Water Rheos ---- | | 21.60 | |
| Scott and Current Transformers ----- | | 200.00 | |

Supplementary Reports

| | | |
|--------------------------------------|-----------|----------|
| Rheostats and Circuit Breakers ----- | 194.84 | |
| Instruments ----- | 400.20 | |
| Transformers ----- | 192.00 | |
| Magneto Tachometer ----- | 140.00—\$ | 1,528.83 |

Forge and Foundry Division—

| | | | |
|---|----|----------|----------|
| Labor ----- | \$ | 600.00 | |
| Iron and Steel for Forge ----- | | 296.77 | |
| Repairs and Replacements to Machinery and Apparatus ----- | | 67.66 | |
| Supplies as Plumbago, Flour, etc. ---- | | 49.45 | |
| Coal for Forge ----- | | 300.00 | |
| Pig Iron and Brass for Foundry ----- | | 150.00 | |
| Moulding Sand ----- | | 57.00 | |
| Coke for Foundry ----- | | 22.85 | |
| Belt for Fan ----- | | 72.51—\$ | 1,616.24 |

Machine Shop Division—

| | | | |
|--|----|-----------|----------|
| Labor ----- | \$ | 548.33 | |
| Repairs, Replacements of Tools, etc. - | | 102.78 | |
| Shop Material ----- | | 246.63 | |
| Attachments for Machines ----- | | 232.59—\$ | 1,130.33 |

Mechanical Engineering Division—

| | | | |
|--------------------------------|----|-----------|--------|
| Laboratory Supplies ----- | \$ | 48.78 | |
| Gasoline ----- | | 15.00 | |
| Data Blanks ----- | | 24.90 | |
| Repairs and Replacements ----- | | 22.54 | |
| Planimeter ----- | | 41.22 | |
| Extensometer ----- | | 160.00—\$ | 312.44 |

Office and Unclassified Division—

| | | | |
|--------------------------------------|----|----------|--------|
| Labor—Janitor ----- | \$ | 480.00 | |
| Office and Janitors Supplies ----- | | 201.39 | |
| Upkeep of Engineering Building ----- | | 31.27 | |
| Attendance on Conventions ----- | | 95.00 | |
| Incidentals ----- | | 10.00 | |
| Lantern for Department ----- | | 52.20—\$ | 869.86 |

Wood Shop Division—

| | | | |
|---------------------------------------|----|-----------|----------|
| Labor ----- | \$ | 522.00 | |
| Supplies, Lumber, Hardware, etc. ---- | | 460.14 | |
| Repairs and Replacements of Tools -- | | 199.96 | |
| Universal Saw and Countershaft ----- | | 300.00 | |
| Bench Hand Joiner and Planer ----- | | 200.00 | |
| Oil Stone Grinder ----- | | 300.00—\$ | 1,982.10 |

Supplementary Reports

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Salaries—

Salaries—Professors and Assistants --\$ 29,903.74—\$ 29,903.74

| | |
|---------------------------------|--------------|
| Departmental Expenditures ----- | \$ 38,803.23 |
|---------------------------------|--------------|

MILITARY DEPARTMENT

Office and Unclassified Division—

| | |
|---|-------------------|
| Postage, Stationery, Record Books ---\$ | 388.19 |
| Military Supplies ----- | 132.29 |
| Upkeep of Band ----- | 62.63 |
| Sabres for Cadet Officers ----- | 379.32 |
| Rebuilding Target Range ----- | 149.00 |
| Classroom Equipment, Maps, etc. ---- | 13.91 |
| Accounts of Lyon & Healy and Capt. McFeely ----- | 20.80—\$ 1,146.14 |

Salaries—

Salaries—Commandant and Assistants—\$ 5,760.36—\$ 5,760.36

| | |
|---------------------------------|-------------|
| Departmental Expenditures ----- | \$ 6,906.50 |
|---------------------------------|-------------|

TEXTILE DEPARTMENT

Carding and Spinning Division—

| | |
|------------------------------------|--------------------|
| Cotton for Class Use -----\$ | 424.45 |
| Repairs and Supplies ----- | 85.69 |
| Materials for Cotton Grading ----- | 200.00 |
| Yarn Testing Machine ----- | 295.72—\$ 1,005.86 |

Dyeing Division—

| | |
|---------------------------------------|------------------|
| Chemicals and Dyestuffs -----\$ | 198.82 |
| Glassware and Laboratory Materials -- | 73.01 |
| Miscellaneous Small Lab. Apparatus -- | 115.74—\$ 387.57 |

Office and Unclassified Division—

| | |
|------------------------------------|--------------------|
| Janitor and Engineer -----\$ | 612.50 |
| Gasoline ----- | 22.93 |
| Stationery, Postage, etc. ----- | 43.00 |
| Student Labor ----- | 65.00 |
| Mill Boy Helper ----- | 245.30 |
| Textile Periodicals ----- | 10.00 |
| Office Desk ----- | 40.00 |
| Mimeoscope ----- | 40.00 |
| Freight on Donated Machinery ----- | 100.00—\$ 1,178.73 |

Weaving Division—

| | | | |
|---------------------------------|----|--------|-----------|
| Warp and Filling Yarn ----- | \$ | 447.96 | |
| Loom Supplies and Repairs ----- | | 85.91 | |
| Knitting Yarns ----- | | 14.00— | \$ 547.87 |

Salaries—

| | | | |
|---------------------------------------|----|-----------|-------------|
| Salaries—Director and Assistants ---- | \$ | 6,852.27— | \$ 6,852.27 |
|---------------------------------------|----|-----------|-------------|

| | | | |
|--|--|--|--------------------|
| Departmental Expenditures ----- | | | \$ 9,972.30 |
|--|--|--|--------------------|

PUBLIC UTILITIES DEPARTMENT**Campus Division—**

| | | | |
|---------------------------------------|----|----------|----------|
| Labor ----- | \$ | 1,993.30 | |
| Fertilizer and Manure ----- | | 436.53 | |
| Seeds, Plants and Trees ----- | | 149.37 | |
| Feed and Upkeep of Two Mules ----- | | 382.99 | |
| Tools and Machines ----- | | 118.61 | |
| Five Flights Cement Steps ----- | | 500.00 | |
| Six Hundred Feet of Sidewalk ----- | | 500.00 | |
| Coping and Drainage of College Road - | | 600.00— | 4,680.89 |

Construction and Repair Department—

| | | | |
|--|----|----------|--|
| Office Supplise, Postage, Files, ect. ---- | \$ | 48.47 | |
| Repairs and Renewals of Apparatus -- | | 15.14 | |
| Tools and Implements ----- | | 45.13 | |
| Necessary Repairs to Public Buildings | | 8,763.75 | |
| Miscellaneous Unforeseen Repairs to Public Buildings ----- | | 578.91 | |
| Salary Superintendent ----- | | 1,637.06 | |
| Partition and Shelving, Room No. 2, Agricultural Hall ----- | | 73.20 | |
| Coping, Clemson Grave Lot ----- | | 250.00 | |
| Additional Basement, Physics Room -- | | 833.17 | |
| Completion of Addition to Engineering Building ----- | | 7,800.00 | |
| Partition in Classroom, Dairy ----- | | 85.37 | |
| Lumber Room (Lumber Shed) ----- | | 57.95 | |
| Moving and Adapting School House for Residence ----- | | 500.00 | |
| Poultry Breeding House ----- | | 1,300.00 | |
| Calf Barn, Dairy Division ----- | | 3,518.83 | |
| Hog Barn, Animal Husbandry Div. --- | | 2,870.78 | |
| Completion of Manure Shed ----- | | 44.45 | |
| Additional Room, Gantt ----- | | 701.00 | |

| | | |
|--|-------------|--------------------------|
| Brick and Cement Well Top, Mills --- | 115.00 | |
| Base and Moulding, Pickett ----- | 35.00 | |
| Ceiling About Chimney and Closet, Goodman ----- | 31.00 | |
| New Kitchen, Moore ----- | 175.00 | |
| Completion and Repairs, Carey ----- | 240.30 | |
| Screens, Servant House and Ceiling, McFeely ----- | 68.00 | |
| Completion of New Work Underway -- | 1,176.17 | |
| Ladies Sitting Room, 2nd Floor, Hotel | 500.00 | |
| Completion of Hog Pastures ----- | 492.33 | \$ 31,956.01 |
| Heat, Light and Water Division— | | |
| Labor ----- | \$ 5,432.58 | |
| Materials, Repairs and Extensions ---- | 1,700.29 | |
| Coal ----- | 12,997.17 | |
| Repairs to Steam Line, Eng. Bldg. --- | 198.41 | |
| Renewals Steam Line to Kitchen ---- | 79.38 | |
| Lightning Arrestors ----- | 48.60 | |
| Carload of Poles ----- | 200.00 | |
| Repairs to Main Sewers ----- | 100.00 | |
| Completion Filter Plant ----- | 1,500.00 | |
| Fence About Filter Basins ----- | 250.00 | \$ 22,506.43 |
| Roads, Sidewalks and Hauling— | | |
| Labor ----- | \$ 821.06 | |
| Top Soiling ----- | 800.00 | |
| Salary of Superintendent ----- | 1,456.00 | \$ 3,077.06 |
| Watchmen Division— | | |
| Salary—Watchman ----- | \$ 801.49 | |
| Supplies ----- | 24.27 | \$ 825.76 |
| Departmental Expenditures ----- | | <hr/> \$ 63,046.06 <hr/> |

MISCELLANEOUS DEPARTMENT

Hospital Division—

| | | |
|-------------------------------|-----------|-----------|
| Utensils, Bedding, etc. ----- | \$ 115.10 | \$ 115.10 |
|-------------------------------|-----------|-----------|

Library Division—

| | | |
|--|-----------|-------------|
| Magazines ----- | \$ 253.00 | |
| Supplies, Cards, Stationery, etc. ---- | 74.62 | |
| Membership Dues to Societies ----- | 29.25 | |
| Salaries ----- | 1,532.00 | |
| Clock ----- | 33.97 | |
| Books ----- | 992.35 | \$ 2,915.19 |

Miscellaneous Items—

| | |
|--|------------------------|
| Expenses of Trustees and Board of Visitors ----- | \$ 1,703.03 |
| Insurance ----- | 5,335.51 |
| Contingent and Incidental Expenses -- | 2,777.84 |
| Ministers ----- | 1,973.38 |
| Y. M. C. A. Secretary ----- | 500.00 |
| Annual Report to Legislature ----- | 82.24 |
| Lyceum Lectures and Entertainments-- | 200.00 |
| Commencement Expenses ----- | 244.90 |
| Trustee Medal ----- | 25.00 |
| Supplies for Museum ----- | 15.00 |
| Upkeep to Telephone System ----- | 149.33 |
| Telephone and Telegraph Operator --- | 600.00 |
| Chapel Lecture Series ----- | 50.00 |
| Membership of College in Nat. Assoc'n | 69.00 |
| Miscellaneous Running Expenses ---- | 216.70 |
| Examination Booklets ----- | 106.83 |
| Memorial Tablets (2) ----- | 450.00 |
| Student Recreation ----- | 144.10 |
| Salary Magistrate ----- | 56.00 |
| College Catalog ----- | 550.00 |
| Lewis Homestead Site ----- | 1,700.00 |
| Hotel Equipment ----- | 746.31 |
| Memorial Tablet (Dr. Mell) ----- | 50.00 |
| Building Sinking Fund ----- | 55,457.80—\$ 73,202.97 |

President's Office Division—

| | |
|---|------------------------|
| Stamps, Stationery, Supplies, etc. ---- | \$ 1,049.44 |
| Traveling Fund (Conventions, etc.) -- | 553.37 |
| Emergency Labor in Office ----- | 201.50 |
| Salaries ----- | 10,418.80—\$ 12,223.11 |

Treasurer's Office Division—

| | |
|---------------------------------------|-------------------|
| Record Books, Stationery, Postage --- | \$ 774.85 |
| Emergency Assistance ----- | 276.34 |
| Premium on Treasurer's Bond ----- | 62.50 |
| Treasurer's Annual Report ----- | 240.00 |
| Salaries ----- | 4,809.98 |
| Steel Safe for Vault ----- | 44.33—\$ 6,208.00 |

| | |
|--|---------------------|
| Departmental Expenditures ----- | \$ 94,664.37 |
|--|---------------------|

SUMMARY**Expenditures by Departments**

| | |
|-------------------------|------------------------|
| Public State Work ----- | \$ 75,048.10 |
| Academic ----- | 37,826.71 |
| Agricultural ----- | 51,208.91 |
| Chemical ----- | 10,946.39 |
| Engineering ----- | 38,803.23 |
| Military ----- | 6,906.50 |
| Textile ----- | 9,972.30 |
| Public Utilities ----- | 63,046.06 |
| Miscellaneous ----- | 94,664.37—\$388,422.57 |

Report of State Bank Examiner

GENERAL REPORT

The accounts of Clemson Agricultural College were carefully examined and audited. It appears that all funds have been administered with economy consistent with efficiency.

While the total of funds handled is large, a comparatively small part was expended for strictly college activities. The college is really a highly technical institution requiring high priced experts and expensive machinery and equipment.

During the period audited, expenditures for the college proper amounted to \$388,422.57, including improvement, additions to plant and equipment for teaching. . Public service (Extension Work) shows an expenditure of \$224,445.74 and Research (Hatch and Adams Fund) \$34,685.62.

The College Treasurer handled during the year \$258,814.56 of Cadet Funds, and Students' deposits amounting to \$77,640.91. These latter funds are administered for the sole use and benefit of the students.

An account to which attention is directed, under the general head of "Re-investment", is of special interest, in as much as the general balance in this account goes to swell the general expenditures of the college, without actually doing so. For convenience the college carries a number of side accounts under the general head of "Re-investment Accounts". Most of these accounts represent merely turn-overs with no new income to the college resulting therefrom. Our exhibit "Re-investment Account" merely shows the standing of these accounts.

The items "Reserve Fund" represents the money necessary to carry the college during the first half of its fiscal year, July 1 to December 31, during which time there are practically no receipts from the fertilizer tax.

The total receipts under "Re-investment" are \$300,698.41, while the total expenditures were \$316,184.29.

The clerical condition of the Treasurer's office is excellent, the books free from errors in final balances.

The funds of the college are appropriated by the trustees on the "Budget System", in which careful consideration is given to every item asked for.

In conclusion I desire to thank the College Treasurer, S. W. Evans, and his help, for their kindness and readiness to aid in every way a thorough audit of the institution.

JAMES H. CRAIG,

State Bank Examiner.

EXHIBIT "A".

COLLEGE ACCOUNT

RESOURCES

| | |
|---------------------------------------|---------------------|
| Privilege Fertilizer Tax ----- | \$313,472.54 |
| Interest on Clemson Bequest ----- | 3,512.36 |
| Interest on Landscript ----- | 5,754.00 |
| Morrill and Nelson Fund (U. S.) ----- | 25,000.00 |
| Tuition from Cadets ----- | 17,472.83 |
| Sales, Interest, Rents, etc.: | |
| Breakage ----- | \$ 301.51 |
| Heat, light and water ----- | 2,355.65 |
| Interest ----- | 8,420.41 |
| Rents ----- | 4,399.27 |
| Miscellaneous ----- | 7,734.00— 23,210.84 |
| <hr/> | |
| Total ----- | \$388,422.57 |

EXPENDITURES

Public State Work Department—

| | |
|---------------------------------------|-----------------------|
| Scholarships and advertisements ----- | \$ 13,151.32 |
| Coast Experiment Station ----- | 2,973.35 |
| Crop Pest Commission ----- | 4,329.88 |
| Fertilizer Analysis ----- | 12,250.06 |
| Fertilizer Inspection ----- | 29,445.94 |
| Miscellaneous Public Service ----- | 1,292.58 |
| Pee Dee Experiment Station ----- | 3,832.58 |
| S. C. Experiment Station ----- | 2,671.84 |
| Veterinary Inspection ----- | 5,100.55—\$ 75,048.10 |
| <hr/> | |

Academic Department—

| | |
|---------------------------------------|----------------------|
| Expense and Equipment ----- | 1,998.56 |
| Salaries College ----- | 25,603.61 |
| Salaries Morrill and Land Scrip ----- | 10,224.54— 37,826.71 |
| <hr/> | |

Agricultural Department—

| | |
|---------------------------------------|---------------------|
| Expense and Equipment ----- | 18,793.72 |
| Salaries College ----- | 26,490.27 |
| Salaries Morrill and Land Scrip ----- | 5,924.92— 51,208.91 |
| <hr/> | |

Chemical Department—

| | |
|---------------------------------------|---------------------|
| Expense and Equipment ----- | 2,257.15 |
| Salaries College ----- | 5,404.30 |
| Salaries Morrill and Land Scrip ----- | 3,284.94— 10,946.39 |
| <hr/> | |

Engineering Department—

| | | |
|---------------------------------------|-----------|-----------|
| Expense and Equipment ----- | 8,899.49 | |
| Salaries College ----- | 19,375.80 | |
| Salaries Morrill and Land Scrip ----- | 10,527.94 | 38,803.23 |

Military Department—

| | | |
|-----------------------------|----------|----------|
| Expense and Equipment ----- | 1,146.14 | |
| Salaries College ----- | 5,760.36 | 6,906.50 |

Textile Department—

| | | |
|---------------------------------------|----------|----------|
| Expense and Equipment ----- | 3,120.03 | |
| Salaries College ----- | 6,060.61 | |
| Salaries Morrill and Land Scrip ----- | 791.66 | 9,972.30 |

Public Utilities Department—

| | | |
|-------------------------------------|-----------|-----------|
| Campus Division ----- | 4,680.80 | |
| Construction and Repairs ----- | 31,956.01 | |
| Heat, light and water ----- | 22,506.43 | |
| Roads, sidewalks, etc. ----- | 3,077.06 | |
| Watchman, salary and supplies ----- | 825.76 | 63,046.06 |

Miscellaneous Departments—

| | | |
|---------------------------|-----------|-----------|
| Hospital ----- | 115.10 | |
| Library Supplies ----- | 1,383.19 | |
| Library Salaries ----- | 1,532.00 | |
| Miscellaneous items ----- | 17,745.17 | 20,775.46 |

Building Sinking Fund (Transfer) --- 55,457.80

President's Office:

| | | |
|-----------------------------|-----------|-----------|
| Expenses and Supplies ----- | 1,804.31 | |
| Salaries College ----- | 10,418.80 | 12,223.11 |

Treasurer's Office:

| | | |
|-----------------------------|----------|----------|
| Expenses and Supplies ----- | 1,398.02 | |
| Salaries College ----- | 4,809.98 | 6,208.00 |

Total Expenditures (College) ----- \$388,422.57

EXHIBIT "B"**ADAMS AND HATCH FUNDS****RESOURCES**

| | | |
|---|-----------|---------------------|
| Balance Farm Products, July 1, 1919 ---\$ | | \$ 3,857.44 |
| Received Adams Fund ----- | 15,000.00 | |
| Received Hatch Fund ----- | 15,000.00 | |
| Received Farm Products ----- | 3,047.61 | 33,047.61 |
| Total ----- | | \$ 36,905.05 |

EXPENDITURES

| | | |
|--|-----------|--------------|
| Salaries ----- | 20,457.72 | |
| Labor ----- | 5,592.51 | |
| Publications ----- | 415.76 | |
| Postage and Stationery ----- | 836.31 | |
| Freight and Express ----- | 228.95 | |
| Heat, light, water and power ----- | 214.75 | |
| Chemicals and laboratory supplies ----- | 591.34 | |
| Seeds, plants and sundry supplies ----- | 1,056.78 | |
| Fertilizer ----- | 1,690.20 | |
| Feed Stuff ----- | 1,375.33 | |
| Library ----- | 282.19 | |
| Tools, machinery and appliances ----- | 780.72 | |
| Furniture and fixtures ----- | 164.27 | |
| Scientific apparatus and specimens ----- | 721.38 | |
| Live stock ----- | 20.00 | |
| Traveling expenses ----- | 179.65 | |
| Buildings and land ----- | 77.76 | 34,685.62 |
| | | <hr/> |
| July 1, 1920 balance ----- | | 2,219.43 |
| | | <hr/> |
| Total ----- | | \$ 36,905.05 |

EXHIBIT "C"

EXTENSION WORK (SMITH-LEVER FUNDS)

| | |
|--|-----------------------|
| Balance July 1, 1919, to cover unpaid accounts ----- | \$ 6,288.49 |
| Federal Appropriations ----- | \$117,222.87 |
| State Appropriations ----- | 67,994.99— 185,217.86 |
| | <hr/> |
| Appropriation by counties ----- | 39,227.88 |
| | \$230,734.25 |

DISBURSEMENTS

| | |
|---|---------------------|
| Salaries ----- | \$154,000.22 |
| Labor ----- | 660.23 |
| Publications ----- | 4,042.79 |
| Postage, telegraph, freight, etc. ----- | 2,734.26 |
| Stationery and small printing ----- | 7,354.71 |
| Heat, light and water ----- | 664.86 |
| Miscellaneous supplies ----- | 391.56 |
| Library ----- | 135.06 |
| Tools, machinery, etc. ----- | 54.63 |
| Furniture and fixtures ----- | 2,470.19 |
| Scientific apparatus ----- | 393.27 |
| Travelling expenses ----- | 51,204.46 |
| Contingent expenses ----- | 339.50—\$224,445.74 |

Vouchers issued on balance above and

paid after July 1, 1919 ----- 6,288.49

\$230,734.23

Included in the above are vouchers aggregating \$39,227.88 recorded in side account by Treasurer but paid by the counties direct.

EXHIBIT "D"**CADET FUND**

| | Receipts | Expenditures |
|----------------------------------|--------------|--------------|
| Balance July 1, 1919 ----- | \$ 10,015.33 | \$ |
| From Subsistence ----- | 152,367.99 | 155,074.14 |
| From Heat, Light and Water ----- | 12,477.02 | 12,474.42 |
| From Laundry ----- | 14,748.88 | 14,748.88 |
| From Hospital ----- | 6,026.00 | 7,259.49 |
| From Incidentals ----- | 4,745.00 | 7,332.34 |
| From Uniforms ----- | 52,933.25 | 52,756.05 |
| From laboratory fees ----- | 764.50 | 764.50 |
| From diploma fees ----- | 651.00 | 669.59 |
| From Breakage ----- | 2,536.00 | 2,536.00 |
| From Miscellaneous ----- | 1,549.59 | 1,841.15 |
| July 1, 1920 Balance ----- | | 3,358.00 |
| | <hr/> | <hr/> |
| | \$258,814.56 | \$258,814.56 |

STUDENTS' DEPOSIT ACCOUNT

| | |
|----------------------------|------------------------|
| Balance July 1, 1919 ----- | \$ 641.67 |
| Deposits ----- | 76,999.24—\$ 77,640.91 |

DISBURSEMENTS

| | |
|-------------------|--------------------|
| Checks paid ----- | \$ 77,556.62 |
| Balances ----- | 84.29—\$ 77,640.91 |

EXHIBIT "E"

REINVESTMENT ACCOUNT

| | Cr. Bal. July 1, '19 | Dr. Bal. July 1, '19 | Expendi- tures | Receipts | Cr. Bal. June 30, '20 | Dr. Bal. June 30, '20 |
|-------------------------|-------------------------|-------------------------|-------------------|--------------|--------------------------|--------------------------|
| Animal Husbandry\$ | | \$ 2,061.88 | \$ 13,717.39 | \$ 5,646.88 | \$ | \$ 10,132.39 |
| Beef Cattle | 1,469.26 | | 4,838.52 | 8,369.26 | | |
| Cadet Breakage | 162.76 | | 1,294.66 | 1,131.90 | | |
| Board of Health | | 57.45 | 456.00 | 465.05 | | 48.40 |
| Coast Station | | 1,532.16 | 2,819.45 | 2,472.76 | | 1,878.85 |
| Creamery | | | 15,200.64 | 11,877.66 | | 3,322.98 |
| Dairy | | 7,648.02 | 17,126.05 | 16,508.64 | | 8,265.43 |
| Educ. Disab. Soldiers | | | 1,719.88 | 5,462.84 | 3,742.96 | |
| Engineering Bldg. | 158.50 | | | | 158.50 | |
| Farm | | 1,887.86 | 20,567.62 | 17,220.72 | | 5,234.76 |
| College Hauling | 1,679.26 | | 4,241.05 | 2,561.79 | | |
| Heat, Light & Water | | | 2,392.21 | 2,392.21 | | |
| Hog Cholera Serum .. | 363.33 | | 55,044.97 | 54,667.74 | | 13.90 |
| New Hospital | 1.34 | | | | 1.34 | |
| Hotel | | 593.19 | 16,102.01 | 16,664.33 | | 30.87 |
| Insurance Sink. Fund | | 3,147.12 | | 9,582.63 | 6,435.51 | |
| Interest | | | 8,420.41 | 8,420.41 | | |
| New Laundry | 2,050.44 | | | 81.21 | 2,131.65 | |
| Manufac. of Flags | | 126.04 | 85.69 | 24.92 | | 186.81 |
| Miscellaneous | | | 11,762.74 | 12,957.46 | 1,194.72 | |
| Norris Medal | 61.34 | | 47.40 | 114.00 | 127.94 | |
| Pee Dee Station | | 1,487.22 | 12,073.87 | 13,555.69 | | 5.40 |
| Poultry Husbandry .. | | 349.20 | 1,031.04 | 417.43 | | 962.81 |
| Printing | | 170.86 | | 170.86 | | |
| Rents | | | 7,528.00 | 7,528.00 | | |
| Reserve | 111,296.64 | | 22,041.14 | 65,157.53 | 154,413.03 | |
| Reserve to repay loan | 506.25 | | 21,368.05 | 20,861.80 | | |
| Smith-Hughes Fund .. | | 3,677.12 | 12,396.16 | 3,810.98 | | 12,262.30 |
| Sou. Ry. Loan Fund.. | 635.12 | | 75.00 | 113.71 | 673.83 | |
| Summer School | 471.82 | | 4,595.31 | 6,615.32 | 2,491.83 | |
| Textile Dept. | 178.11 | | 518.98 | 592.61 | 251.74 | |
| Upkeep Residences | 311.81 | | 2,791.27 | 3,166.02 | 686.56 | |
| Veterinary Hospital .. | 168.46 | | 3,400.75 | 3,096.86 | | 135.43 |
| Wood Shop | 764.01 | | 1,736.55 | 1,439.70 | 467.16 | |
| Piano | | 105.00 | | 50.00 | | 55.00 |
| Army Tr. School "B" | 2,336.08 | | 2,336.08 | | | |
| Smith-Lever Int. Acct. | 1,071.72 | | 476.89 | 1,677.63 | 2,272.46 | |
| S. A. T. C. | 15,837.40 | | 15,837.40 | | | |
| Cadet Exchange | 71.06 | | 16,505.23 | 15,795.67 | | 638.50 |
| Claims | | 262.07 | | 262.07 | | |
| Geo. Cherry Loan Fd. | 362.74 | | 150.00 | 250.00 | 462.74 | |
| Cash on hand | | | | | | 132,338.14 |
| Total | \$139,957.45 | \$ 23,105.19 | \$316,184.29 | \$300,698.41 | \$175,511.97 | \$175,511.97 |

EXHIBIT "F"

CONDENSED STATEMENT

Sources of College Revenue and Expenses for Fiscal Year, July 1,
1919 to June 30, 1920, Inclusive.

INCOME

| | | |
|---------------------------------------|--------------|---------------|
| Privilege Fertilizer Tax ----- | \$313,472.54 | |
| Interest on Clemson Bequest ----- | 3,512.36 | |
| Interest on Land Scrip ----- | 5,754.00 | |
| Morrill and Nelson Fund (U. S.) ----- | 25,000.00 | |
| Tuition ----- | 17,472.83 | |
| Sales, interest, rents, etc. ----- | 23,210.84 | \$ 388,422.57 |

Adams and Hatch Funds—

| | | |
|-----------------------------|-----------|-----------|
| Balance Farm Products ----- | 3,857.44 | |
| Received Adams Fund ----- | 15,000.00 | |
| Received Hatch Fund ----- | 15,000.00 | |
| Received Farm Fund ----- | 3,047.61 | 36,905.05 |

Extension Work—

| | | |
|------------------------------------|------------|------------|
| Balance to cover unpaid work ----- | 6,288.49 | |
| Federal Appropriation ----- | 117,222.87 | |
| State ----- | 67,994.99 | |
| Counties (Memorandum) ----- | 39,227.88 | 230,734.23 |

Cadet Fund—

| | | |
|----------------------------|------------|------------|
| Balance July 1, 1919 ----- | 10,015.33 | |
| Receipts sundry ----- | 248,799.23 | 258,814.56 |

Reinvestment Fund—

| | | |
|--------------------------------|------------|------------|
| Net balance July 1, 1919 ----- | 116,852.26 | |
| Receipts ----- | 316,184.29 | 433,036.55 |

Students' Deposit Account—

| | | |
|----------------------------|-----------|-----------|
| Balance July 1, 1919 ----- | 641.67 | |
| Deposits ----- | 76,999.24 | 77,640.91 |

| | | |
|-----------------------------------|--|----------------|
| Total Receipts and Balances ----- | | \$1,425,553.87 |
|-----------------------------------|--|----------------|

DISBURSEMENTS

| | |
|-----------------------------|--------------|
| College ----- | \$388,422.57 |
| Adams and Hatch Funds ----- | 34,685.62 |
| Extension Work ----- | 230,734.23 |
| Cadet Fund ----- | 255,456.56 |

| | | |
|-----------------------------|------------|----------------|
| Reinvestment Accounts ----- | 300,698.41 | |
| Cadet (checks paid) ----- | 77,556.62 | \$1,287,554.01 |

Balances July 1, 1920—

| | | |
|-----------------------------|------------|----------------|
| Adams and Hatch Funds ----- | 2,219.43 | |
| Cadet Fund ----- | 3,358.00 | |
| Reinvestment Fund ----- | 132,338.14 | |
| Cadet Deposits ----- | 84.29 | 137,999.86 |
| | | <hr/> |
| | | \$1,425,553.87 |

BANK BALANCES

College, Cadet, Reinvestment and Experiment Station Funds.

Reconciling with Banks.

Balances July 1, 1920.

| | |
|--|--------------|
| National Bank of Sumter ----- | \$ 18,000.00 |
| Bank of Greenwood ----- | 13,000.00 |
| Bank of Anderson ----- | 48,000.00 |
| Farmers & Merchants Bank of Anderson ----- | 44,459.52 |
| Pickens Bank ----- | 13,000.00 |
| Palmetto National Bank ----- | 52,500.00 |
| Exchange Bank, Newberry ----- | 13,000.00 |
| Farmers Bank, Abbeville ----- | 8,000.00 |
| Peoples Savings Bank, Abbeville ----- | 13,000.00 |
| National Bank, Abbeville ----- | 3,000.00 |
| Bank of McCormick ----- | 13,000.00 |
| American Bank, Greenville ----- | 8,000.00 |
| National Bank, Newberry ----- | 15,500.00 |
| Bank of Troy ----- | 1,500.00 |
| Union Savings Bank, Bennettsville ----- | 17,633.18 |
| Fort Hill Bank ----- | 1,000.00 |

| | |
|-----------------------------------|--------------|
| Total ----- | \$282,592.70 |
| Bank of Pendleton Overdraft ----- | 45,272.13 |

| | |
|-----------------------------------|------------|
| Total ----- | 237,320.57 |
| Checks out (list exhibited) ----- | 99,405.00 |

\$137,915.57

| | |
|----------------------|-------|
| Cash in office ----- | 84.29 |
|----------------------|-------|

| | |
|-------------|--------------|
| Total ----- | \$137,999.86 |
|-------------|--------------|

Smith-Lever Fund

| | |
|--|-----------|
| Pickens Bank ----- | 15,000.00 |
| Union Savings Bank ----- | 19,613.94 |
| | <hr/> |
| | 34,613.94 |
| Less O-D Bank Pendleton ----- | 28,357.56 |
| | <hr/> |
| Total ----- | 6,256.38 |
| Less checks outstanding (list exhibited) ----- | 6,256.38 |
| | <hr/> |

Report of Board of Visitors

Anderson, S. C., Aug. 30, 1920.

To the Honorable Board of Trustees
Of Clemson Agricultural College,
Clemson College, S. C.
Gentlemen:

The Board of Visitors, in accordance with the law of this State, after due notice, visited Clemson College on May the 5th and 6th, 1920, and on that date and the day following made a thorough and systematic inspection and investigation of practically all phases of the college operation and life. Some of the Board of Visitors were detained by sickness or other causes, and those making the inspection were Messrs. B. H. Moss, G. A. Buist, H. M. Cassels and T. F. Watkins.

Our inspection was much facilitated by the arrangement made for our accommodation and by the courtesies and assistance rendered to us by the President, several members of the faculty and several representatives of the student body.

We had the opportunity of seeing the cadet corps in military drill, made a thorough inspection of the hog barns and farm, the dairy barns and dairy cattle, the veterinary hospital, the Y. M. C. A. building and its appliances, the central power station, John C. Calhoun mansion, fortunately preserved as a shrine for patriotic South Carolinians, and the main college building, all on the first day. That evening we had a very interesting and instructive meeting with a number of the members of the faculty and with the representatives of the College Press, these three students being representative men elected by the student body and men who from their student officers were in touch with student sentiment. At this meeting we were given a thorough insight into the administrative and accounting systems in use at the college, and had also a free round table discussion of all phases of college student life. On the second day, after attendance at chapel service, we inspected the Agricultural Department, Chemistry Department, including the fertilizer inspection and analysis division. We inspected carefully the student rooms, toilets and baths, the water supply, the kitchen and store rooms, or commissary, dining hall, the refrigerating plant and the abbatoire. After dinner with the cadets, at which we were assured by them only a typical menu was served, we inspected the Textile Department, Engineering Department, and site for the proposed hospital.

In the first place, we wish to report that the splendid physical condition of the cadet corps was so obvious from their appearance that our subsequent investigation of the records on this matter was hardly necessary, and but merely verified what we were sure was the case, that the health of the students is as fine as could be in so large a body. This is not surprising in view of the setting-up exercises, regular life, and other benefits of your military discipline and drill, when coupled with the sanitary conditions, water supply, and supply and preparation of food. We were satisfied and cheerfully report that we do not see how the quality and preparation of the food could be better except at enormously greater and unreasonable expense. In our opinion there is no necessity or reason for serving better or more food than was being served at the time of our inspection. Our inquiries at random among the student body and directly with the representatives that we talked freely with on several occasions convinced us that the food then being served was typical of the food that had been served all spring.

We report further that in our opinion the plant is being run at as high a degree of efficiency as is obtained in any business or other organization that we are acquainted with, and that the State is getting the maximum amount of results for every dollar invested in this great plant. We congratulate the State of South Carolina on the great asset it has in Clemson College and the educators connected with it, and only wish that the State and the tax payers of the State were more fully informed of the character and extent of the facilities it offers to the students and to the people of the State, and took even greater advantage than is being taken of these splendid facilities and the services rendered by those entrusted with the administration of the college teaching and college work.

Our specific recommendations are:

1st. That provision be made by the Legislature for the building of the building of the infirmary or hospital which was planned before the War.

2nd. That the long distance telephone and telegraph service connecting the college with the rest of the State be improved and made available at a greater number of hours of the day and night than has been the case in the past.

3rd. That suggestions 1 and 2 submitted to the Committee on revision of the cadet regulations by the President in his letter of April 2nd, 1920, appended hereto as an exhibit, be put into effect, if this has not already been done.

Respectfully submitted,

(Signed) T. F. WATKINS,

Chairman, Board of Visitors.

REPORT OF THE BOARD OF VISITORS—1920

EXHIBIT

Excerpt from letter of W. M. Riggs, President, to Committee on Revision of Cadet Regulations of Clemson College, dated April 2, 1920.

"I take the liberty of making the following suggestions:

1. That the sessional limit for demerits be increased from 121 to 150.

2. That the so-called Senior Class Privileges be either specifically given in the Regulations, or specifically denied, so that they may not continue an annual disturbing factor. If given, I think they should be subject to withdrawal for violation of any accompanying military provisions, and the campus privilege, if given, should be withdrawable upon the recommendation of the faculty in the case of any student not properly maintaining himself in his classes."

Report of the South Carolina Experiment Station

Clemson College, S. C., November 22, 1920.

Dr. W. M. Riggs, President.

Clemson College, S. C.

Dear Sir:

I have the honor to submit herewith the thirty-third annual report of the South Carolina Experiment Station for the fiscal year ending June 30, 1920.

One effect of the World War on agriculture has been an increased appreciation of research. The Experiment Stations during the past three years have been called upon to demonstrate in concrete form the value of their research and they have done this in a way which merits the approval of all agricultural workers. During the campaigns for increased food production every effort was made to secure the application of all scientific data that seemed to have a bearing on food production and agricultural advancement. This emphasized in the minds of the public the value of the results of agricultural experimentation and caused farmers everywhere to appreciate as never before the fundamental importance of the application of science to practical agriculture. As a result a more appreciative public is now clamoring for information on all kinds of important questions. The Extension forces, the teachers of agriculture and those having charge of agricultural control work are continually being embarrassed by demands for more accurate information on many fundamental agricultural problems. These forces in turn pass the request on to the Experiment Stations and our research workers are constantly confronted with demands for information on many problems which they have neither funds nor facilities for solving.

In addition to the problem of increasing production and controlling animal and plant diseases on which we have worked for the past thirty years, there are new lines of investigation which the Experiment Stations are being called upon to undertake. I refer to the Economic problems affecting farm management, home economics and the distribution and marketing of farm products. The Hatch and Adams funds of the federal government were appropriated especially for investigation of agricultural questions bearing on production, and the majority of the Experiment Stations have not had the facilities for conducting studies in Farm and Home Economics. These problems are now becoming so acute that inves-

tigations along these lines seem absolutely essential if we are to continue to advance.

In the face of appreciation of the work of the Experiment Stations, and the increased demands for results, the Research Agencies have been seriously handicapped on account of the fact that many of the workers have been attracted to other fields, where larger opportunity for financial betterment existed. Many of the workers who had been contented to devote their entire time and energies to investigation work before the war have seen the vision of larger opportunities in commercial fields and are permanently lost to research. The more attractive salaries in teaching and Extension work have also depleted the ranks of research workers, so that it is difficult to fill the vacancies in the Experiment Station Staff. This is especially true of the assistants and the lower salaried positions. It has been impossible for us to meet competition of other organizations because our funds have not increased and many of our projects require large expenditures for labor, fertilizer, supplies and equipment, which have likewise greatly advanced in price.

The appropriation made by the State Legislature at the last session for Agricultural Research has enabled us to enlarge the work to some extent at our sub-stations, and has also enabled us to undertake additional projects bearing upon crop production and live stock development.

The following Adams Funds projects are being continued:

- No. 2. Effect of temperature moisture on insect activity.
- No. 6. A study of the inheritance of barrenness in corn.
- No. 10. Cotton anthracnose investigation.
- No. 19. A study of bacterial diseases of cotton.
- No. 21. A study of seed production and tuber formation in Irish potatoes.
- No. 22. A study of the bacterial content of milk.
- No. 24. A study of inheritance in oats.
- No. 25. Further study of the determination of moisture in soils and agricultural materials with the study of the nature of the decomposition given off.
- No. 26. A study of the effect of stirring soil on moisture content, oxidation, nitrification, and crop yield.
- No. 27. A study of factors influencing oil content on seed.

Progress has been made with all of these during the year. The work of all of them has been more or less interfered with by changes in the staff, and by pressure of other work. I feel, however, that our staff has been strengthened during the year, and we are looking forward to better results for the coming season. There are no particular outstanding results to report at this time.

The following is a list of our Hatch projects—arranged according to division:

Agronomy Division

Cotton culture and spacing tests.

Corn cultural tests.

A study of the effect of companion cropping of corn with legumes.

General comparative fertilizer tests.

Comparative tests of phosphoric fertilizer.

Variety tests with corn, cotton, wheat, oats, barley, sorghum, beans, peanuts, and velvet beans.

Comparative tests of grass and forage crops.

Animal Husbandry Division

Comparative tests of the value of velvet bean meal, peanut meal, and cotton seed meal, as protein feed for hogs.

Comparative tests of fish meal and tankage in pork production.

The comparative tests of rape, crimson clover, burr clover, alfalfa, rye, and barley, as winter grazing crops for hogs.

A study of the factors influencing production of soft pork.

Botany Division

A study of corn root diseases.

A study of miscellaneous cotton diseases.

A study of rust resistance in small grains.

Forestry experiments consisting of methods of seeding and rate of growth of the different species of pine at the Coast Station.

Dairy Division

A study to determine the most economical concentrate to supplement cotton seed meal as a feed for dairy cows in the South.

The comparison of corn silage and sorghum silage, for milk production.

A study to determine the feed required, and the cost of raising dairy calves.

A comparison of line breeding and out-crossing as a system of breeding dairy cattle.

Entomology Division

A study of methods of wintering bees.

A study of the comparative efficiency of different spray materials in controlling scale insects.

Horticulture Division

Fertilizer tests with sweet potatoes.

A study of the influence of the time of digging sweet potatoes upon keeping qualities.

Breeding fruit of the Genus *Rubus*.

Experiments in the utilization of muscadine grapes.

Tests of new importations of fruits and vegetables introduced by the U. S. Department of Agriculture.

Variety tests of peaches, plums, apples, and grapes.

Variety tests of Irish potatoes, sweet potatoes, and tomatoes.

SUPPORTED BY STATE FUNDS

Agronomy Division

Comparative tests of nitrogenous fertilizer at the Pee Dee Substation, and at the Coast Station.

General comparative fertilizer tests with corn, cotton, and small grain, at the two sub-stations.

Breeding work with Cleveland Big Boll and Cook Cotton, wheat, barley, rye, Lee County and Lowman Yellow corn.

A study of the effect of Trona potash on cotton and corn.

General comparative fertilizer tests on the varieties of soil types in South Carolina, conducted in cooperation with farmers.

The effect of continuous fertilizer on composition of soils.

Animal Husbandry Division

Tests with different breeds of sheep.

Breeding experiments with horses and mules.

Botany Division

Plant disease survey.

Dairy Division

Official testing of dairy cows in the State.

Entomology Division

A study of the influence of different factors on the hibernation of the boll weevil.

Experiments with dusting as a means of boll weevil control with calcium arsenic.

Horticulture Division

Variety tests with peaches, grapes, and small fruit, at the sub-stations.

Variety tests of pecans at the Coast Station.

I am giving below a summary of some of the important results accomplished during the year, as well as a general discussion of some of the activities not covered by reports, or heads of divisions, which are attached hereto and made a part of this report.

Agronomy

The Agronomy Division has more projects under way than any other division of the College, and a large number of their investigations are of fundamental importance. This division continues to devote special attention to problems relating to field crops and soil fertility. With South Carolina spending over \$50,000,000 a

year for fertilizer we naturally feel that it is the duty of this division to conduct such investigations with reference to the fertilizer requirements of our soils and crops as will enable us to advise our people what kinds and qualities of fertilizers it is best for them to use. The work which we have had under way with this end in view at our main station and at the Pee Dee Station, at Florence, has been continued and enlarged to include additional tests. Data compiled from these tests during the past three years are now being prepared for publication in bulletin form.

We have during this year inaugurated a new series of fertilizer tests in cooperation with farmers in different sections of the State. These are financed from the appropriation for Agricultural Research made by the last legislature, and are being conducted on the major soil types of the State. South Carolina has a very variable soil, consisting of about ten types which are of special agricultural importance. Results secured from tests conducted on one soil type in the western part of the state will not, of course, apply to a different soil type in the eastern part of the state. From these tests we hope to find out: (1) What combination of phosphoric acid, ammonia and potash will give best results on a certain soil type and for a certain crop; (2) What is the most profitable rate of the application for each crop on each soil type, and (3) Does the soil type being tested need lime. One of these tests conducted on sandy loam soil in Allendale county, under heavy boll weevil infestation this year, gave very interesting results. The best plots yield more than a bale of cotton per acre, and the results indicate that nitrogen is our greatest limiting factor, and phosphoric acid second in importance in producing cotton on this type of soil, under boll weevil conditions.

We have continued to study the effect of Trona potash and borax on crops. Cooperative tests were conducted on six farms in Darlington County this season and serious injury resulted from all rates of Trona potash applied. On the Pee Dee Station the results were about the same as last year, that is: little injury resulted when moderate amounts of Trona potash containing borax was applied to cotton and corn. We now feel that Trona potash is very injurious under some conditions, but that the results are influenced largely by the kind of soil, the climate and other factors. This, we believe, is the true explanation why there has been injury in some places and not in others, and why so many conflicting reports have been given out with regard to the matter.

Variety tests with various crops continue to give interesting and valuable information. As a result of our variety tests with cotton for the past several years we are prepared to make the following recommendations for boll weevil conditions in South Carolina:

The best short staple cotton for land free from wilt—Cleveland Big Boll.

The best short staple cotton for land infected with wilt—Dixie Triumph.

The best long staple varieties—Webber No. 49 and Webber No. 82.

Fulghum and Appler oats, Boggs Blue Stem and Leaps Prolific wheat; and Douthit, Cokers E-1, Lowman Yellow and Garric corn, continue to give the highest yield in our tests. Detail results for these tests for the past three years are being prepared for publication in bulletin form.

Satisfactory progress has been made with the breeding work with cotton, corn, rye, wheat, and barley, and what seem to be superior strains have been isolated and are being further tested and increased.

The study of the factors affecting the oil content of cotton seed is yielding some interesting results, which promise to have an important bearing on the formation and production of oil in plants. The other Adams fund projects on "Barrenness in Corn" and "Inheritance in Oats" are being continued and are yielding results.

Animal Husbandry

The better part of the year has been spent in building up and enlarging the Animal Husbandry Division. Professor L. V. Starkey, now head of this division, has shown considerable enthusiasm for his work and has done a great deal of constructive work, during the year, in developing this division. Realizing that we would not have funds sufficient to develop all phases of the work at one time, we decided last fall to concentrate on hogs, and to build up this feature of the division as rapidly as possible. We are just completing a new hog barn, which has cost about six thousand (\$6,000) dollars, and we have purchased during the year twenty pure bred Duroc-Jersey and Poland China sows, and an exceptionally good boar of each of these breeds. The Poland China boar was grand champion at the Ohio State Fair, and at the Tri-State Fair at Memphis last year, and is, we believe, the best Poland China boar in the south. We have on hand now about four hundred and fifty (450) head of hogs and pigs, and are planning to use a great many of these in our experimental work. We have set aside about sixty acres of land for the hog farm, and have purchased wire and posts for fencing this. When these fields are fenced, we plan to undertake rather extensive experiments with crops, which will be hogged off and converted into pork.

We are now cooperating with the Bureau of Animal Industry of the U. S. Department of Agriculture, in an investigation to de-

termine the factors influencing the production of soft pork. In order to develop the soft pork project, and other experimental work needed along this line, we will need a man who can devote his entire time to the research work, and provision is made for this in the estimates for agricultural research, submitted to the Budget Commission.

Professor Starkey is planning experimental work with beef cattle at the Coast Station, and has purchased fifteen head of pure bred Aberdeen Angus cattle, which have just been delivered to this station. We plan to begin some experimental work with beef cattle here at Clemson, just as soon as funds are available.

This division is also conducting some tests with the different breeds of sheep—Hampshire and Southdowns are being used. Three ewes of each breed were purchased. One of the Southdowns is an imported ewe from the King of England's flock, and was grand champion in her class at the International Live Stock Show at Chicago in 1919.

Dry lot feeding tests have been conducted with hogs to determine the comparative value of tankage and fish meal as protein supplements to corn. These tests were conducted here at the college, and duplicated at the Pee Dee Experiment Station. Fish meal proved to be an economical substitute for tankage and the result of these experiments show that the hogs fed fish meal made slightly larger gains, and at a little less cost than those fed tankage.

The horse breeding project is being continued and we now have a number of grade Percheron mares, from which we are raising mules. These mule colts from grade Percheron mares look very promising, and we believe that they are going to make mules which will be well suited to South Carolina farm conditions.

Botany

The Botany Division has continued to study the influence of physical factors on the vitality of the Anthracnose fungus in cotton seed. The seed have been dried by passing currents of hot air over them and by heating them in a vacuum. The seed have also been treated with various chemicals and with different gases under pressure. It has been found that the fungus can be killed in the seed by some of these methods, but no practical method has been devised which kills all of the fungus, without serious injury to the seed. Some of these methods, which give promise of yielding encouraging results, are being continued.

Some attention has been given during the year to corn root diseases, which have appeared in several sections of the State. Dr. Ludwig is studying some of the organisms which have been isolated from the diseased plants, and is also making a study of soil and climatic factors, which might be responsible for the trouble.

The breeding work with wilt resistant cotton, which has been conducted in cooperation with the Bureau of Plant Industry, has reached the point where it seems advisable to turn this work over to the farmers and cotton breeders. The varieties that have been developed have proven of such great value, and have come to be so widely used, that it no longer seems necessary to continue using public funds for the work.

This division has received a large number of specimens of diseased plants during the year, and has kept up active work with the farmers and county agents, relative to the control of the diseases of our common crops.

The research work in Plant Pathology has been closely correlated with the work of the Crop Pest Commission, and the data which the research workers have obtained relative to various destructive diseases have been applied in working out quarantine regulations and control measures.

Chemistry

Dr. Lipscomb, of the Chemistry Division, continued his work on a method of determining moisture in soils and agricultural materials and has published an additional article on this subject. This method consists of heating samples in a vacuum and collecting and analysing the products given off.

The analytical work connected with several important projects conducted by other divisions of the station has been done by this division. Dr. Lipscomb has continued to cooperate with the Botany Division, in the effort to develop a method for destroying anthracnose in cotton seed, by drying the seed and by treating them with various chemicals and gases. He is also making the chemical analysis in connection with two projects which the Agronomy Division is conducting—that is: “The study of the effect of soils and fertilizer on the oil content of cotton seed,” and the study of the effect of stirring soil on moisture content, oxidation, nitrification and crop yields.” More than forty samples of cotton seed have been analysed in the study of the influence of factors on oil content and a large number of samples taken from various fertilizer plots, and from different soil types, still remain to be analysed. There has been so much routine and analytical work of this kind to do that there has been little time available for purely chemical research. The analysis of the cotton seed so far indicates that potash is an important factor in the formation of oil, definite conclusions cannot be drawn, however, until a larger number of samples from different fertilizer plots and soil types have been analysed.

Dairy

The Dairy Division continues to cooperate with the Alabama and North Carolina Experiment Stations, in a study to determine a more economical concentrate to supplement cotton seed meal as a feed for dairy cows in the South. Practically all of our pure bred cows have been on an official test this year, and we have, therefore, not been in a position to make as extensive feeding tests as we hope to do in the future.

Data have been kept on more than fifty Jersey and Holstein calves, during the year, in an effort to determine the feed required and the cost of raising calves. The calves are weighed each week and measurements made once a month. With the exceptionally high price which we have paid for feed, it has cost an average of \$12.00 each to raise Jersey heifers to one month of age and \$84.51 to raise them to one year of age. With the completion of our new calf barn we will have better facilities for conducting more accurate work along this line.

In continuing the study of the prepotency of the pure bred bulls, used in the Station herd, this division is making a study of the results of line-breeding and out-crossing as systems of breeding dairy cattle. In this project the Jerseys will be used and we are fortunate in having a number of animals that will fit in well with the plans of the experiment. Chromo's Sensation, the bull which we bought from the Shanklin sale will be used for line-breeding, with daughters and granddaughters of Blue Fox's Eminent's and Vive Glow Chief, the bull we purchased from Oregon will be used for out-crossing.

We are also conducting line-breeding of Holsteins, in cooperation with the Dairy Division of the U. S. Bureau of Animal Industry. They have loaned us a bull which we will use in this project.

Our herd has been tested twice during the year for tuberculosis, and at the last test none of the animals reacted. This indicates that the herd is entirely free from tuberculosis, and we have planned to go ahead and add a foundation herd of pure bred Guernseys in the immediate future.

We have continued the official testing of the herd and now have six registered Holsteins, with advanced registry records, and four more cows on test. We also have twelve Jersey cows with register of Merit records and have six more on test which are making good records. We are placing all of the pure bred animals on official test as rapidly as they freshen and will, of course, make these records the basis of our breeding operations in the future.

This division has charge of the official testing of all the dairy cows in the State, and under Professor Fitzpatrick's supervision the official testing in the state has developed from almost nothing

three years ago until now we have two cow testing associations in operation and about one hundred and twenty cows on official test. There is probably no other line of dairy work which means as much in increasing the production of the individual cows in the state. The production of the average dairy cow is about 200 lbs. of butter fat per year. The range of production of the cows tested in this state is from 300 lbs. of butter fat to 867 lbs. If all of our pure bred cows were put on tests, and only the better ones used for increasing the herds there would be rapid strides in increasing production.

We hope to put on a man who can devote his entire time to experimental work with our herd and checking up and supervising the official tests in the state. Provision is made for this in our budget for Agricultural Research, which has been submitted to the legislature.

Entomology

The Division of Entomology continues to devote the larger share of their time and energies to the study of the influence of temperature-moisture on insect activity. During the last fiscal year this work has been conducted along the lines of insect ecology and studies have been made in the fields along economic lines. These have included experiments with the army worm, red spider, and the boll weevil. All of the data obtained in these biological studies have been used to forecast probable outbreaks of destructive pests.

With the spread of the boll weevil over the entire state, considerable attention has been paid to the biology of this insect and its life history and habits have been studied under different conditions prevailing in different sections of the state. Special studies along this line have been conducted on Little Edisto Island, James Island, and at Summerville.

Experiments on poisoning the boll weevil were conducted at these places. The records for this season, however, are too incomplete at this time to make any definite statement as to results. Weather conditions were adverse for poisoning.

During last winter a large hibernating cage was constructed on Edisto Island, about 3400 boll weevils were used in this, and their activities carefully checked up during the winter and spring. During the coming winter there will be a number of these cages located at suitable points for the purpose of studying the behavior of the weevil, and finding out what percentage will survive the winter under different conditions. Data are also being secured on the time that the weevil emerges from winter quarters in different sections, and this will be valuable in planning control measures. Data collected this year indicate that the period from egg laying to emerging to adult weevils averages under our conditions, $17\frac{1}{2}$ days,

and the period from emerging to egg laying averages $7\frac{1}{2}$ days, giving a life cycle of 25 days.

This division continues its studies on wintering bees out of doors. Many different packing materials have been used for protecting the bees in winter. Among the most promising of these are sawdust, forest leaves, and straw.

Professor Conradi, the head of this division, continues to give a large share of his time to the work of the Crop Pest Commission. This is necessary because of the constant danger of the importation of new and destructive pests. During the year there have appeared in this country a number of pests which we must guard against very carefully. The Pink Boll Worm, Bean Beetle, European Corn Stalk Borer, and the Japanese Beetle are a few of these. It is necessary, of course, that we give some time to the study of these pests, and be prepared to plan measures which will prevent their introduction into the state.

Horticulture

The Horticultural Division has continued to study the factors which influence seed production and tuber formation in Irish potatoes. A number of promising strains of the Lookout Mountain seedlings have been isolated, and have been increased. The original lot of twenty-one hundred seedlings, which we started several years ago, has been culled down to eighty-one, which seems to be of sufficient promise to continue. The investigation is yielding very interesting information on Irish potato breeding and production, and we have every reason to believe that we will get very valuable new varieties from some of the strains which we have growing.

Several foreign vegetables which have been brought in by the U. S. Department of Agriculture, have been experimented with during the year. Among the most promising of these are the Chinese Cabbage, Yudo and Japanese Celery. Mr. Young, who is conducting the tests of these feels that they all have considerable promise as vegetables for this country.

The sweet potato fertilizer test has been continued in cooperation with other states and the results here indicate that potash is not necessary in our Piedmont soil, even for sweet potatoes. The use of large amounts of nitrogen has resulted in the production of luxuriant foliage, but has not increased the yield.

A number of foreign fruits, imported by the U. S. Department of Agriculture have been added to our orchards. These embrace a variety of common fruits, as well as some which are not so common. Among the latter one of the most promising is the Jujube, a Chinese fruit, which when boiled in syrup and dried, bears a close resemblance to the date.

Work looking to the utilization of the muscadine grape has been continued. A bulletin is now in the press, giving the results of this work. A number of crosses have been made with the Brighton and Lindley, and other varieties of bunch grapes. These hybrids are being grown for further breeding and experimental work.

A large number of tests with small fruits have been made and breeding work started with raspberries and blackberries, with a hope of producing improved varieties adapted to South Carolina conditions. One hundred and fifty pure seedlings of the Haymaker raspberry have been grown and several of these have borne fruit of sufficient promise to be propagated for further tests.

Further experiments in frost prevention have been conducted and it has been found that spraying the trees with white wash and other mixtures has no effect in delaying the opening of the buds. The temperature was, however, raised from two to three degrees in the orchards during the cold spell in the spring, when frost threatened, by means of small open fires at frequent intervals through the orchard.

Coast Experiment Station

The outstanding feature at the Coast Station is the lack of adequate drainage. Our soil fertility studies and many of our other field experiments have had to be temporarily abandoned until the drainage system can be put back in working order.

An investigation of this system was made and a complete report on its condition was prepared last December by H. M. Lynde, of the office of Drainage Investigation of the U. S. Department of Agriculture. This report sets forth the facts that the outlets of the system are inadequate and many of the tiles in the lateral drains are filled up with sand and silt. A part of the appropriation made by the last legislature for agricultural research was set aside by the Board of Trustees for the purpose of improving the outlets and taking up and relaying the tile. A flood gate has been put in at the outlet at Rumphs Creek, to prevent the water from this stream from entering the drainage system, and the outlet ditch leading to Platts Branch has been cleaned out and the bottom regraded. Mr. Riley, the Superintendent of this station, is now engaged in taking up the tile in the laterals, cleaning them out and relaying them. When this is completed we have every reason to expect that the system will again function in such a way as to give us good drainage.

Labor conditions have improved during the year, and the seasons were such that we made a fairly good crop on all of the land, in spite of the poor drainage. Even under the conditions of the boll weevil infestation, which we had, we made a little more than one-

half a bale of cotton to the acre. Experiments were undertaken looking to the control of these pests, but the rains were so constant at the time the poison was applied that little benefit resulted from the dusting. The weevil was so late in making its appearance on the station this year, and labor at that time so scarce that other control measures such as picking squares and special cultural practices were not attempted. We have experiments along these lines outlined for next season.

The corn and hay crops were good and we have ample feed for the horses and hogs and plenty of hay and roughage for the cattle. The old variety orchard, which had served its purpose by indicating which varieties of peaches and grapes were best suited to this section of the state, has been abandoned and a new home orchard, including fruit and berries, has been put out. Experiments are also under way with Irish potatoes, sweet potatoes, and asparagus. An acre has been seeded in alfalfa, and this is doing well. We have purchased three mules during the year, and now have enough work stock to take care of ordinary work on this station. The Forestry experiments are being continued and the planting of different species of pine which have been made from year to year, are now developing sufficiently to indicate the value of the different methods of seeding and the rate of growth of some of our best pines.

During the year we have devoted considerable attention to the development of the live stock work on this station. We have just purchased three hundred acres of land north of and adjoining this station from the Southern Railway, and have this fenced for experimental work in pasture development and beef cattle production. Our grade herd of cattle, which we started last year, now numbers eighteen, and we have recently purchased fifteen head of pure-bred Aberdeen Angus cows and calves for this work. We still feel that this cut-over pine land of the Coastal Plain can be profitably utilized for producing cattle.

Last year we started some experiments to determine the carrying capacity of these lands, and these are being continued. We have also seeded about ten acres to Lespedeza, and have made an effort to get carpet grass seeded over larger areas in our pastures. It was impossible this year to get a large amount of carpet grass seeded, but we have purchased a supply which will be sowed in the spring.

We seeded Lespedeza by simply sowing it broadcast on the land, which had recently been burned over. No effort was made to plow the land, or cover the seed in any way, but they have germinated and the young plants are developing rapidly. As this project develops we will, of course, need further equipment in the way of buildings, silos, fences, etc., and we, of course, expect this to come from the legislative appropriation for Agricultural Research.

I feel that there is an opportunity at this station to do a great deal of work that will be of great value in the agricultural development of this large area of cut-over lands, and am very anxious that every effort be made to organize the work so that we can do fundamental research with crops as well as cattle.

Pee Dee Experiment Station

Work at the Pee Dee Station has continued to progress in a very satisfactory manner. The amount of experimental work is increasing constantly at this station. We are accumulating vast amounts of valuable data on the different phases of crop production. Mr. R. E. Currin, Superintendent of this Station, continues to handle the work in a very efficient manner. While labor conditions have been somewhat critical, they have improved materially in the last few months, and I believe by the beginning of the year we will have ample labor to handle the work at this station.

We probably have more fertilizer experiments at this station than could be found at any other Experiment Station in the country. We are not only testing the value of the different elements in the production of crops, but are conducting numerous tests with a view of determining the value of the different sources of nitrogen, phosphoric acid and potash. This, of course, necessitates a great deal of plot work, and makes the operations rather expensive. We have one series of fertilizer tests which include one hundred and eighty-one tenth-acre plots. This series has been in operation for seven years and the results covering this period are now being compiled for publication.

The rotations, which we are studying here, are continuing to give very interesting and valuable results. In one of our rotations with cotton, corn, small grain and peas where we have two crops of peas every three years we have been able to maintain the yields with very little fertilizer.

We are continuing to conduct experiments at this station in co-operation with the U. S. Department of Agriculture. These include fertilizer tests with corn, cotton, tobacco, sweet potatoes and peanuts. In these experiments we are testing the different kinds of domestic potash salts, as compared with the European salts, which made up the bulk of the potash in fertilizers before the war.

Tobacco is one of the most important crops of the Pee Dee section, and we are continuing to conduct fertilizer and cultural experiments and variety tests with the crop. The excessive rains during the period when the tobacco was maturing caused considerable damage, and this season the crop was not as profitable as usual.

We are still continuing our experiments with peanuts and sweet

potatoes, in cooperation with the office of Horticultural Investigation of the U. S. Department of Agriculture. Of the fifty-six varieties of sweet potatoes planted here for the past few years, only about ten varieties seem to have any particular value, and only three or four of these stand out as being especially suited to our conditions. Last year we converted one of our tobacco houses into a sweet potato house, and stored several hundred bushels of potatoes in it very successfully. A false floor was put in this barn above the flues, and the bins were constructed to hold the potatoes. The heat for curing the potatoes was obtained by firing the barn in the usual way, and during the especially cold weather during the winter an oil stove was placed in the barn to keep the temperature from going too low. It takes very little additional equipment to prepare a tobacco barn for sweet potato storage. A floor can be put in so as to be easily removed when it is time to cure the next crop of tobacco. In this way one house can be used for storing tobacco and potatoes. We have also started some breeding with two of our most promising varieties, Nancy Hall and Porto Rico.

The peanut experiments are yielding very valuable data as to the varieties, cultural practices, fertilizers, etc., that are best for our conditions. Mr. F. E. Miller, who has been conducting this work for the U. S. Department of Agriculture, has resigned his position to take up work with the North Carolina Experiment Station, and it seems that we might have to finance this work ourselves in the future, if it is to be continued.

The work at this station has developed so rapidly, and we now have such a large number of detail experiments under way, that it is going to be necessary for us to add another man to our staff. If we are to get anything like maximum results from this work we must have some one who can devote his entire time and energy to following up these experiments in the field and interpret and tabulate the results. I have provided an item in my next year's budget for such an assistant, with the hope that sufficient appropriation for Agricultural Research will be made by the legislature to take care of this. Mr. Currin's detail report of the activities of this station is appended as a part of this report.

Publications and Library

During the year four regular publications have been issued, totalling over 13,600 copies. The number and title of these are given in the report of the Agricultural Editor, which is appended hereto. The members of the Experimental Station staff have as usual prepared extension bulletins and news articles giving results of their work in proper form for the publishers. These have been sent out by the Agricultural Editor.

The list of the classified names of the Experiment Station mailing

list now totals nearly five thousand and additions are being made constantly. We have a machine for cutting our own stencils, which enables us to make necessary revisions promptly, and keep our mailing list up to date.

We have made every effort to develop our Experiment Station Library as rapidly as possible and during the year Mrs. Crown Torrence, who was appointed librarian, has devoted her time to classifying, cataloging and arranging the material which has accumulated since the establishment of the station. We have a large amount of valuable material on hand that needs classifying and binding, and there are also many valuable reference publications and scientific journals that we have subscribed to in an effort to make available for our research workers the literature bearing on their problems. It is our hope to develop this library to the point where it will contain all information on agriculture that is of value to research men and students. There should, of course, be such a library connected with the institution which is responsible for pointing the way for all agricultural development in the south.

Experiment Station Farm

On Jan. 1st, 1920, the college farm comprising all of the cultivated land owned by the college, and located west and south of the campus, was turned over to the experiment station, to be used for experimental purposes. Parts of this, about 250 acres have been set aside for growing silage and hay for the dairy herd and feed and grazing crops, for the beef cattle and hogs in the experiment station herds. The balance of the land, comprising about 200 acres, is being used for growing cotton, small grain and hay.

Mr. C. S. Patrick was appointed superintendent and head of the farms division, and has charge of all the work on the experiment station farms, with the exception of Horticulture. This has resulted in pooling all of our equipment and labobr, and using them where they are most needed.

With this additional land available for research and the organization of the farm work improved we have better facilities for conducting experiments at Clemson with crops and animals.

State Support for Research

As I have pointed out in the introduction of this report, there is every reason why the work of the Experiment Stations should be enlarged and increased. Our research work is the foundation upon which the principal industry of the state is based, an industry which produced five hundred million dollars worth of agricultural products in 1919. If our agriculture is to continue to develop along safe and sound lines our farm practices must continue to be based on scientific facts, and as our agriculture readjusts itself to changing conditions, our research agencies must keep ahead and be

able to point the way. In this way practices can be developed which would help our farmers to grow and handle successfully new crops which the boll weevil and changing conditions are forcing them to produce.

We are asking the legislature for \$50,000.00 this year for the support of the research work at our sub-stations, the support of our cooperative experimental work with the farmers throughout the state, and for supplementing and enlarging research work at the main station at Clemson. Fifty thousand (\$50,000.00) dollars is only one-tenth of one percent of the value of the agricultural products of last year, and while this seems to be an exceedingly small sum to invest in agricultural research, which is the very foundation of the industry, we feel that this will meet the most outstanding needs. A much larger sum could be used with profit to our agriculture, but we do not deem it wise to ask for a larger appropriation at a time when there is every indication that declining prices will work a hardship on our tax payers.

Respectfully submitted,

H. W. BARRE,

Director.

Annual Report of The Extension Service

REPORT OF EXTENSION SERVICE

By W. W. Long, Director.

Since our last annual report was submitted our State has been blessed with a most prosperous year. Never in its history have the farmers been so free of debt and possessed such large bank accounts. This can be understood when the fact is known that South Carolina stood sixth in the list of states in per capita wealth produced in 1919 and second in wealth produced per acre. The average gross income per farm of thirty acres in South Carolina for 1919, according to a recent report of the Bureau of Crop Estimates, was \$2,338.00. It will be of further interest to note that the increase in live stock, milch cows, other cattle and swine in South Carolina for the last five years has shown an average far above that of the United States.

The Extension Service has reached the doctrine of a diversified agriculture since the work was first inaugurated and therefore it is with pride that we can point to the fact that the increase in corn acreage in the past five years is nearly three times as great as the increase in cotton acreage. The increase in the acreage of wheat and oats is in excess of the increased acreage of cotton. These facts indicate that our people are beginning to realize the necessity of making their supplies at home.

SCHEDULE "A"

Sources of Funds for Extension Work—Year Ending June 30, 1920.

| | |
|--|----------------|
| Federal Smith-Lever Fund | \$117,222.87 |
| State Appropriation | 67,994.99 |
| Counties and Miscellaneous | 97,381.38 |
| | <hr/> |
| | \$282,599.24 |
| From U. S. Department of Agriculture | 45,390.00* |
| | <hr/> |
| Total | \$327,989.24** |
| | <hr/> |

* Disbursed by the Treasurer of the United States, and does not appear in schedules "B" and "C".

** Winthrop College has immediate supervisoir of the expenditure of \$105,582.52 of the total for Home Demonstration Work with women.

SCHEDULE "B"

Summary Statement of Expenditures, by Projects, Showing Sources of Funds Used for Extension Work.

| Projects | Total | — Smith-Lever — | | County and Miscellaneous |
|------------------------------------|--------------|-----------------|--------------|-----------------------------|
| | | Federal | State | |
| Administration | \$ 27,303.84 | \$ 15,371.31 | \$ 11,932.53 | ..... |
| Printing and distrib. of pub..... | 4,042.79 | 2,382.55 | 1,660.24 | ..... |
| County Agents | 96,300.47 | 39,520.45 | 19,573.89 | \$37,573.89 |
| Negro Demonstration | 4,855.95 | 3,925.15 | 930.80 | ..... |
| Live Stock | 5,500.77 | 2,270.50 | 3,230.27 | ..... |
| Dairy | 4,342.99 | 2,024.25 | 2,318.74 | ..... |
| Home Demonstration Agents | 105,582.52 | 29,190.73 | 16,584.30 | 59,807.49 |
| Horticulture | 8,415.32 | 5,824.38 | 2,590.94 | ..... |
| Poultry | 1,933.05 | 1,702.93 | 230.12 | ..... |
| Marketing | 2,275.99 | 1,944.97 | 331.02 | ..... |
| Entomology | 3,907.08 | 2,252.21 | 1,654.87 | ..... |
| Botany and Plant Pathology | 2,421.88 | 1,208.25 | 1,213.63 | ..... |
| Boys Club Work | 5,828.13 | 5,162.78 | 665.35 | ..... |
| Rural Sociology | 1,753.70 | 719.87 | 1,033.83 | ..... |
| Cotton Grading and Marketing | 1,607.48 | ..... | 1,607.48 | ..... |
| Agronomy | 6,527.28 | 3,722.54 | 2,804.74 | ..... |
| TOTAL | \$282,599.24 | \$117,222.87 | \$ 69,994.99 | \$97,381.38 |

SCHEDULE "C"

Summary Statement of Expenditures, by Projects, Showing Classification of Expenditures for Fiscal Year Ending June 30, 1920.

| Items of Expense | Total | Adminis- tration | Print. and dis. of pub. | County Agents | Home Economics | Negro Demon. |
|--------------------------------|--------------|---------------------|----------------------------|------------------|-------------------|-----------------|
| | | | | | | |
| Salaries | \$195,729.68 | \$15,194.70 | \$ | \$75,121.61 | \$ 991.63 | \$4,312.51 |
| Labor | 600.23 | 656.78 | ..... | ..... | ..... | ..... |
| Print. and pub. | 4,042.79 | ..... | 4,042.79 | ..... | ..... | ..... |
| Sta. and small print | 7,354.71 | 3,876.53 | ..... | 2,000.00 | ..... | ..... |
| Post., Tel., Tel., Frt., Ex.. | 2,734.26 | 1,957.71 | ..... | ..... | 12.70 | ..... |
| Heat, Light, Water, Power.. | 664.86 | 600.00 | ..... | ..... | ..... | ..... |
| Supplies | 391.56 | 114.76 | ..... | ..... | 96.08 | ..... |
| Library | 135.06 | 122.31 | ..... | ..... | ..... | ..... |
| Tools, Mach'y, Appliances ... | 54.63 | 11.91 | ..... | ..... | ..... | ..... |
| Furniture and fixtures | 2,470.19 | 2,023.63 | ..... | ..... | ..... | ..... |
| Scien. appar. and specimens .. | 393.27 | 282.82 | ..... | 110.45 | ..... | ..... |
| Trav. expenses | 67,628.50 | 408.67 | ..... | 19,068.41 | 240.34 | 543.44 |
| Contingent Expenses | 539.50 | 54.02 | ..... | ..... | ..... | ..... |
| TOTAL EXPENDITURE | \$282,599.24 | \$27,303.84 | \$4,042.79 | \$96,300.47 | \$3,503.83 | \$4,855.95 |

SCHEDULE "C"—Continued.

| Items of Expense | Live | | Home | | | |
|-----------------------------------|-------------------|-------------------|---------------------|-------------------|-------------------|-------------------|
| | Stock | Dairy | Dem. Agts. | Agron. | Horticul. | Poultry |
| Salaries | \$2,449.98 | \$2,409.48 | \$ 73,415.69 | \$4,404.14 | \$5,212.49 | \$1,399.98 |
| Labor | | | | | 3.45 | |
| Print. and pub. | | | | | | |
| Sta. and small print. | | 17.60 | 1,247.21 | 6.00 | | |
| Post., Tel., Tel., Frt., Ex. | 65.50 | 25.35 | 428.67 | 22.52 | 101.61 | 3.15 |
| Heat, Light, Water, Power | | | | | | |
| Supplies | 1.95 | 1.45 | 93.87 | 34.25 | 1.60 | |
| Library | | | | | | |
| Tools, Mach'y, Appliances | | | | | 2.50 | |
| Furniture and fixtures | | | 261.55 | 13.72 | 3.15 | 8.25 |
| Scien. appar. and specimens | | | | | | |
| Trav. Expenses | 2,983.34 | 1,889.11 | 26,631.70 | 1,999.67 | 3,090.52 | 521.67 |
| Contingent Expenses | | | | 46.98 | | |
| TOTAL EXPENDITURE | \$5,500.77 | \$4,342.99 | \$102,078.69 | \$6,527.23 | \$8,415.32 | \$1,933.05 |

SCHEDULE "C"—Continued.

| Items of Expense | Marketing | Entomol. | Botany & | | Rural | Cotton |
|-----------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | Pl. Path. | Club W. | | |
| Salaries | \$ 700.00 | \$1,859.99 | \$1,950.00 | \$3,474.99 | \$1,225.01 | \$1,607.48 |
| Labor | | | | | | |
| Print. and pub. | | | | | | |
| Sta. and small print. | | 44.65 | | 162.72 | | |
| Post., Tel., Tel., Frt., Ex. | 54.51 | 23.87 | 2.00 | 34.54 | 2.13 | |
| Heat, Light, Water, Power | | | | 64.86 | | |
| Supplies | 3.84 | 37.51 | 6.25 | | | |
| Library | 12.00 | .75 | | | | |
| Tools, mach'y, appliances | | 40.22 | | | | |
| Furniture and fixtures | | 133.89 | | 26.00 | | |
| Scien. appar. and specimpns..... | | | | | | |
| Trav. Expenses | 1,505.64 | 1,766.20 | 463.63 | 1,826.52 | 526.56 | |
| Contingent Expenses | | | | 238.50 | | |
| TOTAL EXPENDITURE | \$2,275.99 | \$3,907.08 | \$2,421.88 | \$5,828.13 | \$1,753.70 | \$1,607.48 |

COUNTY AGENTS

The work of the county agents has been in nearly all cases satisfactory. The greatest hindrance has been in securing efficient men and in holding them at the salaries available. This fact will be appreciated when it is understood that the average salary of the county agents for the year 1919 and 1920 was \$1,965.00 with a travel allowance of \$400.00, out of which the expenses of maintaining an automobile had to be paid and in many cases purchased. The cost of maintaining an automobile will average \$50.00 per month and in those cases where the agents of necessity had to purchase a machine it can be readily seen they had but little left at the end of the year. We cannot hope to hold men who will be of real value and service to the people of their counties unless they are paid salaries that compare favorably with those paid in the business world. The funds provided by the State and the Federal Govern-

ment are not sufficient to enable us to compete with this outside interest, therefore, if the people in the several counties expect to secure the best trained and most efficient agriculturists they will see to it that their county delegations provide the necessary funds with which to supplement the State and Federal funds which are prorated equally among the several counties of the State.

The following summary of work conducted has been taken from the agents' annual report:

| Crop | Number Demonstrations | Average acreage Demonstration | Total Acreage | Average Yield per Acre on Demonstration | Average Yield per Acre in Counties |
|-----------------|-----------------------|-------------------------------|---------------|---|------------------------------------|
| Corn ----- | 514 | 16.0 | 8170 | 38.6 bus. | 19.4 bus. |
| Cotton ----- | 500 | 21.8 | 10906 | 2072 lbs.† | 639 lbs.† |
| Tobacco ----- | 218 | 10.3 | 2264 | 821 lbs. | 640 lbs. |
| Oats ----- | 399 | 13.2 | 5298 | 36 bus. | 15 bus. |
| Wheat ----- | 325 | 5.1 | 1677 | 17 bus. | 10.7 bus. |
| Rye ----- | 503 | 7.0 | 3561 | 15 bus. | 9 bus. |
| Bur Clover ---- | 78 | 5.1 | 402 | Grazing and cover crop | |
| Crimson Clover_ | 676 | 8.0 | 5440 | 1.5 tons | 1 ton |
| Alfalfa ----- | 339 | 3.6 | 1321 | 3.5 tons | 2.25 tons |
| Velvet Beans - | 624 | 17.2 | 10777 | 170 bus. (in hull) | 138 bus. |
| Soy Beans ---- | 197 | 1.4 | 287 | 25 bus. | 24 bus. |
| Sweet Potatoes_ | 359 | 3.4 | 1228 | 187 bus. | 112 bus. |
| TOTALS ----- | 4732 | *10.8 | 51341 | | |

† Seed cotton.

* Average.

Orchards. 2,894 farmers were instructed in the culture and care of 353,041 fruit trees.

Dairy Cows. 124 registered bulls and 593 registered females were brought into the State due to the influence of the agents. They assisted the farmers in their respective counties in selling 525 head of purebred dairy cattle to other farmers throughout the State.

Beef Cattle. 121 registered bulls and 894 registered females were brought into the State due to the influence of the agents. 567 head of purebred beef cattle were sold to the farmers throughout the State through the influence of the county agents.

Swine. 430 registered boars and 2,772 registered females were brought into the State due to the influence of the county agents. 2,978 head of registered swine were sold through the influence of the county agents for breeders in their respective counties, to other farmers throughout the State. 213 feeding demonstrations with

1,186 hogs were supervised by the county agents and 1,703 farmers were induced to commence growing grazing crops.

Live Stock Diseases and Pests. 153,138 head of live stock were treated for diseases and pests with the advice and assistance of the agents. Of this number 74,886 were swine treated for hog cholera and valued at \$1,872,150.00

Fertilizers. 367 fertilizer demonstrations were conducted by the agents. 20,218 farmers were advised regarding proper home mixing and formulas. Assisted 101 communities to purchase cooperatively 20,935 tons of fertilizers valued at \$789,101.00 at a saving of \$126,244.00.

Lime. 245 demonstrations averaging 5.4 acres were conducted by the agents and they assisted in purchasing 518 cars of lime for 882 farmers.

IMPROVEMENTS MADE WITH AGENTS' ADVICE AND ASSISTANCE

201 building plans were furnished.

Advice given in the erection of 511 new buildings and the improvement of 723 others.

412 home water systems and 931 lighting systems installed.

41,718 homes screened against flies and mosquitoes.

69 telephone systems were established.

1,501 farmers were furnished plans and induced to adopt systematic crop rotations.

925 new pastures were established.

47 drainage systems were established and 173 farmers induced to drain a part of their farms.

562 farmers were induced to remove stumps from 5,693 acres.

1,371 farmers were induced to terrace 7,492 acres.

3,863 home gardens were improved.

Assisted in 66 road improving demonstrations resulting in 508 miles of improved roads.

6,721 farmers were induced to plant cover crops to be turned under.

Advice and assistance was given in the purchase of 11,431 new labor saving farm implements, tools and machines.

MISCELLANEOUS ACTIVITIES OF THE COUNTY AGENTS

| | |
|--|---------|
| Number of visits by county agents to farmers, club members, business men, etc. ----- | 22,468 |
| Number miles traveled by county agents ----- | 287,568 |
| Calls made on agents relative to work (personal) ----- | 24,608 |
| Calls made on agents relative to work (telephone) ----- | 15,727 |
| Number farmers' meetings held under the auspices of agents ----- | 2,782 |

| | |
|--|--------|
| Total attendance at meetings addressed by agents ----- | 68,040 |
| Average percent county agents' time in office ----- | 19% |
| Average percent county agents' time in field ----- | 81% |
| Number official letters written by county agents ----- | 28,219 |
| Number articles on work prepared for publication by county agents ----- | 1,060 |
| Number bulletins distributed ----- | 28,524 |
| Number farmers growing improved seed for sale ----- | 713 |
| Number farmers keeping cost records ----- | 1,732 |
| Number of farmers influenced to grow sorghum or sugar cane for syrup ----- | 5,240 |

A PARTIAL LIST OF SUCCESSFUL UNDERTAKINGS CONDUCTED IN ONE OR MORE COUNTIES BY COUNTY AGENTS AND SPECIALISTS

Organization Work:

Organization of Rural Communities for community development.

Organization of Boys' Agricultural Clubs.

Organization of County Units, Cotton Association (assistance rendered).

Organization of County and Community Fairs.

Organization of Marketing Associations and Clubs.

Organization of Milk Shipping Stations.

Organization of Counties for securing official cotton grader.

Organization of Hog, Corn and Poultry Club, Show and Sale.

Organization of Bull Associations.

Organization of County for County Veterinarians.

Organization of Trips by Farmers to Boll Weevil Territory in Georgia and Alabama.

Organizations of Live Stock and various breed associations (assistance rendered).

Organization of Cow Testing Associations.

Campaigns Conducted by Agents:

Campaigns for Pastures and Wire Fencing.

Campaigns for Purebred Sires for all Farm Live Stock

Campaigns for more Alfalfa.

Campaigns for Cover Crops and Soil Building.

Campaigns for more and better Live Stock.

Campaigns for more Home Orchards.

Campaigns for Introduction of Tobacco Growing.

Campaigns for Terracing Land.

Campaigns for Hog Cholera Eradication.

Campaigns for Preparing the State to meet the Boll Weevil by proper planning of crops in each county.

Campaigns for Potato Storage Houses.

Cooperative Work of Agents with Farmers and Other Parties:

- In improvement of Seed Corn and Cotton.
- In Standardization by Communities of Cotton and Corn Varieties.
- In Unifying Interests of Farmers and Business Men.
- In Shipments of Hogs and Cattle for Slaughter.
- In Shipping surplus of Corn out of County.
- In Purchase of Fertilizer and Farm Supplies.
- In Holding Bull Association Picnics and Shows.
- In Hog Cholera Control.
- In Live Stock Improvement.
- With State and County Papers in Publishing timely agricultural information.
- In the importation from outside the State the carloads of pure bred dairy and beef cattle and swine.
- In Building Sweet Potato Houses.
- In Holding Live Stock Sales.

Miscellaneous:

- Bee Industry revised on a profitable basis.
- Tractor Demonstrations held.
- Commercial Orchard work promoted in sand-hills.
- Home Mixing Fertilizers promoted where profitable.
- Progress made in securing Diversification of crops.
- Managed Distribution of Government Nitrate Soda.
- Assisted Breeders within the State to dispose of surplus pure-bred live stock.
- Establishment of new herds of purebred live stock within counties.
- The Grading of Cotton.
- Distribution of Bulletins, Weekly News Notes, Information Cards, News Letters and agricultural information generally.
- Silo Building.

PRINTING AND DISTRIBUTION OF PUBLICATIONS

The work of the Agricultural Editor has been pushed with vigor and has included the following activities:

The publication of bulletins, circulars, posters, and plate matter. Two Extension Bulletins, No. 44, entitled "Fighting the Boll Weevil with Pastures and Fencing", and No. 45, entitled "Peanuts", have been published during the year. One circular, No. 18, entitled "Orchard and Garden Handbook", has been published. Two posters, No. 4, on "Cotton Growing", and No. 5, on "Boll Weevil Conferences", have been issued, and two pages of plate material of six columns each have been furnished free to a list of about sixty newspapers. This material, which consists of plates cast by

the Western Newspaper Union from copy furnished by us, is a comparatively expensive form of publicity, but is now very acceptable to many weekly newspapers because of the labor shortage, and serves us as a means of presenting longer discussions that are suitable for use in the Weekly News Notes or the News Letters.

A new series of publications known as Information Cards was begun during this fiscal year to furnish brief instructions and directions on specific phases of agricultural practice. They are used by the farmers as reference cards, and are copied rather freely by the newspapers. Eleven numbers have been issued.

The Weekly News Notes has been issued regularly, the mailing list having increased from 2,650 to 2,950. The material is now a mixture of agricultural news and agricultural information and suggestion. The articles are brief and timely, and are widely copied by the newspapers. The Agricultural Editor has sought to get the county agents, the teachers of agriculture, the bankers, and others to post the Weekly News Notes in accessible places in order to reach still others not reached directly through the mailing list.

News Letters in the series which was begun during the preceding year have been issued from No. 123 to 260 inclusive. The material used in these News Letters is primarily agricultural **News** rather than **Instruction**, but no opportunity is lost to tie some instruction and suggestion to the news. The newspaper editors as a whole consider this the most acceptable material sent out.

During the year attention has been given to departments and special articles in agricultural journals and newspapers. Material has been furnished regularly for "Our Extension Service Department" in the Carolina Farmer & Stockman, a "South Carolina Farm News" column in the Progressive Farmer, and special articles have been furnished to the Southern Ruralist, the Breeders' Gazette, and other publications with the idea of giving to our work wider publicity outside the state as well as in the state. Besides this, specially prepared material has been sent from time to time to newspapers in South Carolina. Several more papers have added farm pages or agricultural sections at the suggestion of the Agricultural Editor, and some of these special departments are edited through the assistance of the County Agent or the Agricultural editor or both. A good many papers now have such departments.

Much thought and attention has been given by the Editor to the matter of getting the County Agents to give more attention to the publicity side of their work as a means of promoting the work through a wider knowledge of what is being done. In this way some of the County Agents have been induced to edit farm columns in their local papers and to furnish editors with material from local sources and with material sent from this office, and also to

supply the Agricultural Editor with material to be used in promoting the work in general. This has resulted in putting the County Agents' work more prominently before the people.

Two other phases of the work which are growing in importance are, first, the distribution of agricultural literature including government publications as well as our own; and, secondly, the development of the agricultural library as a source of readily available information for Extension workers as well as College and Experiment Station workers. The volume of requests for agricultural information is increasingly large, and no opportunity is lost to call the attention of farmers to available material. The agricultural library contains Extension Service material from the various states as well as state experiment station material, U. S. Department of Agriculture material, and various other sources of such information, including probably a hundred agricultural journals.

NEGRO DEMONSTRATION

Statistics concerning the negro farmers of South Carolina show that they form a very important factor in our agriculture and that they make large contributions to the wealth of the State. There are approximately 96,000 negro farmers in the State. They operate 3,994,000 acres of which 2,597,000 are improved. During the past ten years negro farmers increased their acreage more than 200,000 acres. The value of their lands exceeds \$189,000,000.00, while the total value of their farm property exceeds \$189,000,000.00. About 45 percent of the cotton crop of the State is grown by negroes.

During the year there have been seven negro agents working in cooperation with the State Agricultural and Mechanical College at Orangeburg, who devote their entire time to bettering the home conditions and the farming of the negro population of the State. The following extracts from the annual report of R. S. Wilkinson, President of the State College at Orangeburg, and who is supervising agent of the negro demonstration work, indicate the nature of the work done together with some of the accomplishments:

"Visits and Publicity. Our agents made 35,731 visits to farmers and received 33,211 requests at their headquarters for information and assistance. They held 137 meetings with a total attendance of approximately 22,000 farmers. The agents traveled 8,226 miles by rail and 20,460 miles by auto and team; distributed 20,438 bulletins, 523 circulars, and made 1,104 visits to agricultural clubs."

"Program. The principal objects which the agents have tried to attain in as large measure as possible are:

A home garden for every farmer.

Larger production of corn and small grain.

Increased production and consumption of eggs, meat and milk.

The planting of orchards.

The organization of canning clubs.

Community improvement meetings.

Cooperative markets for buying and selling.

Acquiring of improved farm machinery.

Thrift and investments in homes.

Better roads."

"Health and Housing. Much of the work of the agents has also directly influenced personal and public health. The supply of fresh and canned vegetables, a more diversified diet, the care of milk and the home making of butter, a more constant supply of fresh meat, eggs, and other wholesome foods, were ideas stressed by the agents, and these have exerted a marked influence upon the general health of the people. The agents also took an active part in the screening of houses, the destruction of flies and mosquitoes and the protection of food against these and other insects. Considerable effort was put forth in 1919 to assist the farmers in beautifying their homes and surroundings, so as to make farm life more attractive, agreeable, and profitable."

LIVE STOCK

This project has suffered considerably through the resignation of the specialists during the year. During the two previous years our efforts were directed to increasing the meat supply. Consequently a larger number of steers were fed than formerly. Had the price on finished steers remained at the prevailing prices of last fiscal year our farmers would without doubt have increased their feeding operations. As it was about 3,000 steers were shipped into the State to be finished for the market. Our Beef Cattle Specialist gave assistance in securing about half of this number, and personally selected 415 head.

During the year there were 770 steers fed according to suggestions of our Specialists at an estimated saving of \$10,000.00 over ordinary methods of feeding in use among others who fed steers.

There has been a very encouraging interest in breeding beef cattle this year. Our Specialist selected for farmers this year 35 bulls worth \$16,500.00; 102 purebred cows worth \$35,000.00, and 113 grade cows worth \$11,300.00. Eight new breeding herds have been started in the State during the year and the demand for purebred bulls is on the increase.

One of the main reasons why farmers have succeeded no better with purebred stock has been their failure to properly feed and develop young stock born on their farms. Special efforts have

been put forth to remedy this in South Carolina and excellent results are being obtained along this line. We have stimulated the establishment of permanent pastures in connection with the "Farm Fence Campaign", and in the Southern part of the State many farmers are giving attention to this important matter. Two of the specialists conducted a party of 30 South Carolina farmers to the International Live Stock Show in Chicago at which time many of the farmers purchased some first-class breeding stock. One man brought back the third prize Duroc Jersey pig from the Show.

It is worthy to note that while most other parts of the country saw a decrease in the number of brood sows, this State still has the increased numbers obtained under war conditions. With the coming of the boll weevil, the growing of swine for home use and for the market is making remarkable progress and apparently on a permanent basis. There are in the State now about 700 breeders of purebred hogs of which number about 500 have gone into the business during the past three years. The five most important breeds of hogs, in point of numbers, in the State at present are, the Duroc, Poland China, Berkshire, Hampshire and Tamworth. We have continued to promote the cooperative shipping of hogs in carlots and this has been the means of relieving various parts of the State of a surplus of hogs at prices better than were obtainable locally. Had it not been for the work of our agents in inaugurating these cooperative shipments it is doubtful whether the swine industry would have made anything like the progress it has made, for it is well known that nothing so discourages a farmer as to have a surplus of any product which he cannot sell.

DAIRYING

This project has been hampered to some extent by the frequent changes in the field force. We end the year with three specialists in Dairy Extension work, however, and the prospects are excellent for getting work done.

Bull Associations. This has been our main project this year and South Carolina stands at the head of the list of states in the number of cooperative bull associations. There are now eighteen bull associations in the State as follows:

| Name of Association | Number of Bulls |
|---|-----------------|
| Fountain Inn Jersey Bull Association ----- | 3 |
| Oconee Jersey Bull Association ----- | 3 |
| Campobello Jersey Bull Association ----- | 3 |
| Laurens Jersey Bull Association ----- | 4 |
| Simpsonville Jersey Bull Association ----- | 3 |
| Abbeville Jersey Bull Association No. 1 ----- | 3 |
| Abbeville Jersey Bull Association No. 2 ----- | 3 |
| Abbeville Jersey Bull Association No. 3 ----- | 3 |

| | |
|--|----|
| Greenwood Jersey Bull Association | 3 |
| Spartanburg Jersey Bull Association | 3 |
| Anderson Jersey Bull Association | 3 |
| Lancaster Jersey Bull Association | 4 |
| <hr/> | |
| Total in Jersey Bull Associations | 37 |
| Marlboro Guernsey Bull Association | 6 |
| Dillon Guernsey Bull Association | 8 |
| Marion Guernsey Bull Association | 4 |
| Sumter Guernsey Bull Association | 4 |
| Rock Hill Guernsey Bull Association | 4 |
| Williamsburg Guernsey Bull Association | 5 |
| <hr/> | |
| Total in Guernsey Bull Associations | 31 |

Other associations are in process of formation. As a means of improving the average quality of the cattle in a county we have found no method equal to the bull associations. Following the placing of the bulls in every association organized, many of the members immediately began to take steps to secure purebred females to breed to the excellent bulls belonging to the association. A number of picnics were held at the time the bulls were exchanged and at these picnics exhibits were made of the daughters of the association bulls. The evident improvement obtained by the members in using good bulls were thus made so plain to everyone that the bull association idea has gained great impetus this year.

Cattle Purchased. The dairy specialists have assisted in the purchase of twenty-six bulls, and sixty-nine cows and heifers, all purebred from points outside the State.

Plans and assistance were given in the building of two silos, seven dairy barns, four milk houses, and three bull barns.

The demand for purebred dairy cattle of the Jersey, Guernsey and Holstein breeds is increasing and we are guiding this demand toward the purchase of good foundation stock.

The pioneer Cow Testing Association organized last year now has nine members owning 201 cows. Many excellent official records are being made by cows belonging to members of this Association.

POULTRY HUSBANDRY

Following is a list of the farms in each County and the number of fowls under the supervision of the Poultry Division:

Pure Bred Poultry Under Supervision

| County | Number of farms | Number of fowls |
|--------------------|-----------------|-----------------|
| Charleston ----- | 5 ----- | 1,600 |
| Chesterfield ----- | 3 ----- | 500 |
| Clarendon ----- | 1 ----- | 200 |
| Darlington ----- | 1 ----- | 250 |
| Florence ----- | 2 ----- | 400 |
| Greenville ----- | 5 ----- | 450 |
| Lee ----- | 4 ----- | 650 |
| Marlboro ----- | 5 ----- | 1,200 |
| Richland ----- | 3 ----- | 2,600 |
| Spartanburg ----- | 4 ----- | 1,525 |
| Sumter ----- | 6 ----- | 900 |
| Union ----- | 2 ----- | 200 |
| | 41 | 10,475 |

Other poultry plants were visited at the request of the owners and some of these will be operated under our supervision next year. The primary object in establishing the pure bred poultry farms and assisting in their development is to obtain reliable breeding centers at which the popular breeds of poultry can be purchased by nearby poultrymen at reasonable prices.

This demonstration work has in five years resulted in the building up of these forty farms on which pure bred poultry is raised, as well as others that do not receive our constant supervision. Before the demonstration work was commenced there were practically none of these poultry farms in operation. Since a greater profit can be made by breeding pure bred poultry of the highest quality and selling the breeding stock, baby chicks and hatching eggs at more than market prices, these demonstrations have been encouraged to improve the quality of their flocks of poultry and to exhibit their best specimens at County Fairs and the State Poultry Show.

The latter exhibition is conducted annually by the South Carolina Poultry Breeders' Association, an organization which was brought about five years ago through the efforts of the Poultry Division. This organization has been responsible for a great portion of the success of the poultry industry of South Carolina. The Annual State Poultry Shows held in connection with the State Fair at Columbia have an entry of from 900 to 1,500 pure bred fowls. At the next show in October 1920, the Southern Meet of the Rhode the next show in October, 1920, the Southern Meet of the Rhode Rhode Island Reds will be sent to Columbia from the States of North and South Carolina, Tennessee, Georgia, Alabama, Mississippi and Florida, in which States the several hundred members of the Rhode Island Red Club reside.

Another important service of the South Carolina Poultry Breeders' Association is the sale of incubators, brooders, coops, foods, leg bands, remedies, books and magazines to the members of the Association at a reduction from the retail prices. One prominent incubator company allows our members a discount of 35 percent from the regular prices, and over \$500.00 in orders have been sent in to this concern this year. The poultry foods are made in Charleston, S. C., and are sold at considerably less than similar foods can be bought elsewhere. Only the most reliable and successful appliances, foods and remedies are listed in the circular and confidential letter sent to each member. This circular also contains a list of the members of the Association, of which there are 233 at the end of this fiscal year, as well as the variety of pure bred poultry bred by each member.

One of the outstanding features of the State Poultry Show is placing the name and address of the owner of each fowl on exhibition on the coop it occupies. Every visitor could tell the owner of any fowl, and if that fowl was for sale the selling price also appeared on the card. As a result of this publicity and selling campaign \$1,5000.00 passed through the Association for pure bred poultry bought by residents of this State at the Poultry Show. The policy of this Division has always been to improve the quality and increase the number of pure bred poultry grown in this State, and then to make it possible for these breeders to sell their surplus stock advantageously and at the same time establish another breeder in the poultry business. A poultry campaign is underway to place a breeding pen of pure bred poultry, a small incubator and a brooder on every farm in the State. By doing this the production of poultry will be materially increased and the chickens will be hatched at the most profitable season of the year.

The high prices of food stuffs have materially reduced the number of poultry and pigeons kept in South Carolina for supplying the market with eating eggs and squabs. The former business has not received any encouragement from this Division in recent years, because these so-called egg farms must compete with the eggs laid by hens around the farm buildings that live on waste grain and meal. The special poultry farm cannot overcome the competition of the farm hen, but the pure bred hen which produces eggs for hatching, baby chicks, and breeding stock is a money maker because her products are sold at a higher price and she does not have the competition of hens of poor breed.

Practically all the pigeon plants have been discontinued, as pigeons in confinement will not make a profitable production of squabs unless they receive special food containing a liberal percentage of peas.

Every poultry and pigeon breeder is advised to plant a sufficient acreage of small yellow corn and peas to feed his flock of poultry or pigeons the coming year.

The following breeds of poultry have been kept at Clemson College for several years and their quality has been constantly improved: Barred Plymouth Rocks, White Wyandottes, S. C. Rhode Island Reds, Buff Orpingtons, S. C. White Leghorns, Dark Cornish (Indian Games), and Black Langshans.

Specimens of these breeds are kept at Clemson College mainly for illustrating to the students of Poultry Husbandry and to others the standard points of the seven breeds. This work is quite popular and every student obtains at first hand the proper shape and color and the method of judging fowls used in the Show room.

Several hundred chicks were hatched by hot air and hot water incubators. They are being raised in hot air brooders, and when mature will be either kept for the breeding pens or distributed by the College.

Classes in Poultry Husbandry were conducted at Clemson College during the Spring Term. In these classes there were 26 Seniors, 35 One Year Agricultural Students, and 41 Federal Board Students or returned soldiers who were being educated at the expense of the War Department. These students completed a course which embraced the breeds of poultry, the housing, and feeding of young and old fowls, and the incubation and brooding of chicks, and since many of them live in South Carolina and intend to carry on this better poultry work after they return home they will increase the interest in poultry in their locality. A former student living at Greer in Spartanburg County has one of the best strains of S. C. White Leghorns in the State.

Addresses have been delivered on the poultry business, and the poultry exhibits at the Marion, Sumter, Chester and Union County Fairs have been judged. At each of these Fairs the defects as well as the merits of the competing specimens have been shown the owners and suggestions offered for the improvement of the different flocks.

The fifth edition of Extension Bulletin No. 16, "Poultry Culture for South Carolina" is still in print and copies of this popular bulletin are being sent out daily.

A heavy correspondence has been attended to, and all inquiries received from poultry pigeon and pet stock breeders have been answered.

AGRONOMY

Cotton Varieties for Boll Weevil Conditions. To help lessen the damage from the boll weevil, now advancing so rapidly in South Carolina, the Extension Service has tested during the last three

years about twenty of the best varieties of cotton with reference to early maturing. This work was conducted in Edgefield, Aiken, Bernwell, Hampton, Beaufort and Charleston Counties to determine the varieties best suited to beat the boll weevil.

From the results so far obtained and from observation as to fruiting and growth, the short staple varieties recommended for South Carolina conditions are Cleveland, Cook, Dixie Triumph and Dixie.

On land free from wilt Cleveland Big Boll has given the best average results, and this is considered one of the best varieties for South Carolina, if land is entirely free of wilt.

* Cook ranks among the highest yielding varieties in the State, but is not as generally grown, because anthracnose or boll rot is worse in this variety than in any other.

Dixie Triumph is the earliest and highest yielding wilt-resistant variety tested, and can be recommended for wilt-infested land. Dixie has also made good yields on wilt-infested land, but is it not as early as Dixie Triumph.

Among long staple varieties Webber 49 and Webber 82 are the earliest tested. Webber 49 fruits and matures a little earlier than Webber 82. Both are well adapted to the State where wilt does not occur, as they fruit practically as early as the short staples and frequently yield as much seed cotton per acre.

Seed of any of the above varieties can be obtained from breeders in the State who, for several years, have been selecting and breeding for earliness.

Corn Breeding Work. Two main objects are in view in carrying on this work, first, to single out by systematic variety tests from year to year the highest yielding varieties suitable for the three main sections of the State, namely, the Piedmont section, the Pee Dee section, and the Coastal Plain section. Second, to systematically breed up these high yielding varieties in large enough quantities so that farmers in the surrounding territory will have seed corn at a reasonable price. In order to do this work the State has been divided into twelve different sections and breeding work attempted with one man in each of the sections.

The following is a list of the varieties of corn in the 1919 tests and with which breeding work has been done:

Baldwin Red Cob, Henderson's Yellow, Drake's Prolific, Marlboro Prolific, Garrick's Prolific, Pee Dee No. 5, Lightsey's Two-Eared, Johnson's Yellow, Lowman's Yellow, Douthit's Prolific, Coker's Williamson's, Weekly Prolific, Brunson, Wannamaker's Two Eared, Goodman's Prolific, Brunson, Belmont, McMakin, Mosby's Prolific and Baldwin White Cob.

At both of the sub-experiment stations Douthit's Prolific led the

test, and in the two variety tests with farmers Garrick's Prolific led in one and Marlboro Prolific in the other.

HORTICULTURE

Work in this project naturally divides itself into the following sub-projects: Orcharding, sweet potato curing and storage, vegetable gardening and trucking, cooperative canneries, and office work.

Orcharding. The object of the work in orcharding is to further develop and maintain home and commercial orchards in South Carolina. This work is state-wide and is outlined in such a way as to carry each demonstration orchard over a maximum period of three years. Due to the shortage of good nursery stock last fall orchard development has been somewhat handicapped. More interest is being taken in home and commercial orchards and several small nurseries have been started within the year to promote the fruit industry in certain sections.

In all, the horticultural specialists supervised 459 orchard demonstrations in all parts of the state involving a total of 86,482 trees.

Sweet Potato Curing and Storage. The object of this project is that of using the successfully operated curing and storage house as a unit through which to further develop and maintain the sweet potato growing industry in South Carolina. This work is in its third year and has grown to such proportions as to attract considerable interest on the part of farmers and others. We are at present assisting in the organization of growers and warehousemen in the State. The acreage is greatly increased this season. Nineteen potato houses have been built according to approved plans during the year making a total in the state of seventy. There are now ninety-three prospective houses to be built this season.

Vegetable Gardening and Trucking. Our specialists have conducted 94 vegetable and trucking demonstrations for the purpose of stimulating and encouraging more and better gardens, and for marketing and conservation of the surplus. Some phases of this work have been in cooperation with the Home Demonstration forces. One thousand and thirty-six bushels of sweet potatoes were treated to prevent disease and 1150 bushels of disease free seed were selected for our people from points outside the state. Assistance was given in the purchase of 1500 potato barrels. One irrigation system for truck growing was installed.

Cooperative Canneries. This work was originally started as a war measure to encourage the saving of more food products. During the season there were 25,000 No. 3 cans of fruits and vegetables packed in these canneries at an approximate saving of \$2,084.00.

Office Work consisted of correspondence, and arranging needed

publications. The specialists have given assistance in the purchase of nursery stock and spray pumps and thereby saved beginners in these lines a total of \$4,000.00. Seventy spray pumps of the barrel type were purchased with the advice and assistance of specialists-

MARKETING

Surveys have been conducted along several lines in order that accurate and first hand information could be secured relative to the South Carolina Agricultural crops to serve as a basis for special phases of marketing work in this State.

A careful study of each truck crop was made when shipping season began. Methods of handling, packing, grading and marketing were studied. Freight rates, refrigeration rates, railroads used, services received in way of special truck trains, and markets reached were also studied.

The crops studied were cucumbers, cantaloupes, beans, watermelons, peaches, Irish potatoes and sweet potatoes. A survey revealed the fact that some 3,000 cars of Irish potatoes were shipped during the season, 1,500 cars of cantaloupes and 2,000 cars of melons, about 50 cars of peaches and 10 cars of sweet potatoes. The majority of Irish potatoes were handled by two cooperative organizations. Grading was fair within the organizations, but outside there was no uniformity. Watermelons, cucumbers, cantaloupes, peaches, and sweet potatoes were handled by individuals and the grading and marketing practices were found to be very poor.

A study was made of the corn crop of the State. Practices in counties in which a surplus of corn was found was studied. Farmers complained that their home mills paid more for Western corn than they could receive for theirs. Found farmers desirous of selling corn in shuck and mills demand shelled corn in even weight bags and corn well graded. This information was passed on to the farmers and a list of shelling plants was made.

In view of the fact that our State is changing to a diversified program of farming and is planting 50,000 acres of peanuts this year the marketing of this crop has been given considerable study. This is the first commercial peanut crop for South Carolina and it is expected that a great deal of assistance will be needed by the farmers in the preparation and marketing of this crop.

Surveys of milk and meat markets in several cities in this State were made during the year in order to find out why certain cities were paying less than market prices for hogs and sweet milk. This was done in order to be able to advise the producers wherein the trouble lay and to assist them in securing market prices for their products on home and foreign markets.

A study of cooperative shipments of hogs, in transit and at markets was made. The handling of cars; extra time in transit; extra feed bills and custom of marketing all hogs soft at the markets where hogs showed least sign of softness was studied. Hogs sent this year to the same markets as last and fed on the same feed were found soft this year and hard last year. Cars were followed to local or State markets and to markets outside of State. A study revealed degrees of softness and a prejudice against all hogs out of soft hog territory. In other words, all our hogs are soft until found hard and are sold on that basis at terminal markets.

After a careful study of growers and practices followed in melon, cucumber and cantaloupe section of this State; which section includes the Counties of Allendale, Barnwell, Aiken, Jasper, Bamberg, Hampton, Charleston and Beaufort, an organization of melon growers was effected to bring about a better system of grading and marketing of cantaloupes, cucumbers and watermelons. Williston, S. C., was selected as the principal office and shipping point.

In view of the boll weevil changing the farm crops in certain counties of this State, there was a need to form a Marketing Association in certain counties in the boll weevil area so as to provide a ready market or clearing house for all farm produce. In Colleton County assistance was given in the formation of such an Association. This Association plans to furnish the farmers of Colleton and adjoining counties a ready market for all farm crops in any quantity, provided properly graded. And, with the help of the Field Agent in Marketing and a Market Agent for the Association, trained by the Field Agent in Marketing, the people will be taught grades and what proper grading means.

In other counties where there was an undue alarm over the advent of the boll weevil and a desire for a Marketing Association because some other County had such an Association, although no real need of one, the idea was discouraged, because in South Carolina as elsewhere Associations will not live on sentiment alone.

Packing, crating and loading: Several demonstrations were given at sweet potato houses and loading points within the State in the crating, packing and loading for shipment of Irish potatoes, sweet potatoes, and cantaloupes. Found a great need for this kind of work among the inexperienced shippers.

The following is a general summary of other work done:

Furnishing individuals and Association information concerning grades, containers and loading rules for different truck crops.

Advising growers where crates and containers might be purchased, also grading machines, pickers and other accessories needed in successful marketing.

Advised individuals as to markets for certain crops in both express and carlots. Put growers in touch with buyers.

Assisted in making rules for grading and handling of produce in cooperative organizations. Placed this before individuals.

Assisted in the organization of cooperative purchasing and marketing associations.

Assisted in giving all growers of truck crops market news service when it was a benefit to the grower.

Urged the adoption of grades and standards with individuals and associations for all products offered for sale.

Assisted one hundred cattle feeders in the State in finding a market for two hundred cars of beef cattle.

Assisted twenty-five hog shippers in deciding on a market to ship their hogs to. Advised them of prices paid on various markets and of markets ready to receive Southern hogs.

Assisted farmers in securing a supply of following seed from other States: soy beans, velvet beans, crimson clover, burr clover, peanuts and lespedeza.

Attended sixty farmers meetings and discussed some phase of marketing at fifty of these meetings. Total attendance estimated at 8,000.

ENTOMOLOGY

Work in this project has been conducted along two lines: (a) The Control of Injurious Insects, (b) Bee-Keeping.

The insect work has been principally in connection with **boll weevil control** though there were some demands for assistance on forest and greenhouse insects. Great emphasis has been placed on the necessity of cotton growers regarding the boll weevil as a permanent limiting factor in cotton production.

Farmers have been calling constantly for reliable information in regard to poisoning the boll weevil. In cooperation with the U. S. Department of Agriculture Laboratory at Tallulah, La., we have made available to the people of the State all the information that has been developed at that laboratory. We have also kept in touch with the Entomological Divisions of other states west of us and have made use of the experience of these states in preparing information on boll weevil control. There is a very strong tendency on the part of planters to purchase hand dusting guns and then allot too large an acre to each gun. An active campaign has been made to have this corrected so as to prevent unnecessary failures and losses in 1920. Such failures would naturally give a set-back to boll weevil poisoning by any method while as a matter of fact there is great hope that this method of boll weevil control will prove of great value.

At this time it seems that the wheel traction type of dusting machine is likely to be most effective and work this season will be

to see that all types of machines purchased by farmers are given a fair trial. Very few machines, except hand guns, are available for this season's work. However, it is likely that the experiences of farmers this year will serve to guide them in the future in the poisoning work and it is for that reason that we want to keep in close touch with the dusting work and see that it is properly demonstrated on as large a scale as is possible.

Bee-Keeping. Interest in Bee-Keeping has developed beyond our expectations. The requests for help have far outgrown our ability to meet. In order to meet the needs as far as possible this work is confined to educational work and demonstrations in (1) wintering, (2) prevention of swarming, (3) transferring, (4) and requeening. For the purpose of demonstrating in a more definite way the principles of bee yard management a chain of twenty-one demonstration apiaries have been located over the state. These are so arranged as to include some demonstrations in the Piedmont, Sand Hills, and Coastal belt. These demonstration apiaries vary in size from a few to a dozen colonies. Besides giving promise of an increased revenue in honey our bee-keepers are beginning to diversify, some giving their entire attention to the production of extracted honey, others having engaged in the business of selling bees by the pound while still others are making their plans for rearing three landed Italian queens for sale.

BOYS' CLUB WORK

Club work with boys has included, Corn Clubs, Pig Clubs, Wheat Clubs and Calf Clubs.

Corn Clubs. There were 516 members of Boys' Corn Clubs, who produced 16,029 bushels of corn or an average of 37.9 bushels per acre, at a cost of \$12,047.33, or an average of 77 cents per bushel, showing a net profit of \$19,410.69.

The winner of the first prize, William Campbell, of York County, produced 97.9 bushels at a cost of 26 cents per bushel.

The winner of the second prize, James W. Draffin, of York County, produced 100 bushels at a cost of 29 cents per bushel.

The winner of the third prize, Hallum Smith, of Colleton County, produced 112 bushels at a cost of 60 cents per bushel.

Three members made 100 bushels or more per acre.

Pig Clubs. There were 1,740 members of Pig Clubs enrolled in Pig Club work, the money value of their products being \$121,882.30. These youngsters purchased 1,740 pigs, the original cost of which was \$47,961.49, which leaves a difference representing the increased value of the pigs while in the hands of club members of \$73,920.81. The Pig Club work was conducted under three phases, namely, the feeding class, the breeding class, and the sow and litter

class. The average cost of the gains made in each class were—in feeding class, 14 cents per pound, in breeding class, $12\frac{1}{2}$ cents per pound, in sow and litter class, $11\frac{1}{2}$ cents per pound. The average cost of the gains per pound in all three classes of Pig Club work was $12\frac{2}{3}$ cents.

The State prize winners were as follows:

First, Johnsie Smith, Lee County, in the breeding class; second, Howard Norris, Darlington County, in the breeding class; third, Bettie Turner of Fairfield County, in the sow and litter class. * The Grand Sweepstakes offered to the member making best records in two or more phases of club work was won by Johnnie Barrett, of Lancaster County.

A new feature of pig club work in 1919 was the holding of the Boys' Club Live Stock Judging Contest at the State Fair. In this contest over 100 members participated, and three purebred pigs were awarded by breeders in the State as prizes for winners in the contest.

Wheat Clubs. Tommie Drake of Anderson County, won first prize in the Wheat Clubs with a production of 28 bushels per acre at a cost of 72 cents per bushel. Henry LaMaster of Cherokee County, won second place with a production of $21\frac{1}{2}$ bushels at a cost of 91 cents per bushel.

The total enrollment in all kinds of Boys' Clubs was 2,373. These were in 34 counties, the other 12 counties not having clubs.

The total value of all commodities produced by club members was \$165,090.15. The cost of production was \$63,643.60, which leaves \$101,446.55 as the net money value of the activities of club members.

The State prize winners were entertained delightfully in Spartanburg by the Spartanburg Chamber of Commerce at which time the various prizes were awarded.

COTTON GRADING AND MARKETING

This project was enlarged this year by the placing of official cotton graders at seven points, namely, Orangeburg, Darlington, Sumter, Manning, Greenwood, Anderson and Laurens. Funds for the support of this work have come largely from the counties where this work is established. The cotton graders and classers are trained and experienced cotton men and their work is to classify cotton using the U. S. Government grades as the standard. 90,721 bales have been graded during the year. We have received many letters from farmers, bankers and others indicating the great value and need for this work. In order that this work may properly expand and develop we have entered an agreement with the U. S. Department of Agriculture, the South Carolina Division of the Amer-

ican Cotton Association, and the State Warehouse Commissioner for the joint conduct of the work. Under this agreement the Extension Service and the U. S. Bureau of Markets is to secure, train and supervise competent graders in those counties where the county branches of the Cotton Association desire them and will raise the necessary funds for the county cooperation. These graders in cooperation with the county agents and marketing specialists will also look after the local interests in the matter of marketing crops other than cotton. Other phases of the agreement assign responsibility and privileges to each of the parties to the agreement.

Report of The Fertilizer Board

November 29, 1920.

Dr. W. M. Riggs, President,
Clemson College, S. C.

Dear Sir:

I respectfully submit the following report of the Fertilizer Department to this date for the fiscal year ending June the 30th, 1920.

The tonnage of commercial fertilizers sold in this State as shown by the sales of tags is 1,249,926 tons, exceeding the total of last year by 216,039 tons. These figures indicate according to statistics furnished by the Southern Fertilizer Association, that South Carolina leads every other Southern State in the use of commercial fertilizers. This use was greatly curtailed in all the States by war conditions; but these same statistics show the resumption of their normal use has been rather slow in those States where boll weevil infestation first occurred.

In the fall and early winter months of this season alleged shortage of transportation facilities by the Railways delayed getting the usual supplies of acid phosphate, ammoniates and other materials, so the season opened later than usual with some uncertainties as to the final outcome. These causes led to enhanced prices and to a less uniform and satisfactory distribution of fertilizers to farmers in different sections of the State in time for their application with best results in agricultural production.

Inspection

Twelve inspectors entered upon their work, each in his allotted district, on January 12th and the work was made as intensive and thorough as possible. Several changes in the personnel of this force were made, and their places filled by appointment of our graduates and ex-soldiers. Nineteen hundred and sixty seven samples were collected by these inspectors during the season; of these 309 were duplicates and sixteen hundred and sixty eight were sent to the Chemists for analysis. Soon as completed, all these were compiled in an annual bulletin and distributed through our entire mailing list. Beside these, 128 samples were sent in and analyzed for individual farmers and purchasers under the law made for their special benefit.

For the purpose of comparison with last year's work the following exhibit is submitted, as will more fully appear in Dr. Brackett's detailed report.

| | 1919-1920 | | 1918-1919 |
|-------------------------------------|----------------|--|--------------|
| Fertilizers other than meal sold -- | 1,183,978 Tons | | 887,065 Tons |
| Cotton Seed Meal sold ----- | 69,912 " | | 146,822 " |
| No. official samples analyzed ----- | 1,668 " | | 1,301 " |
| No. farmers samples analyzed --- | 128 " | | 136 " |

A detailed statement of the expenses of this Department will appear in the Treasurer's itemized report to which I respectfully refer.

Respectfully submitted,

H. M. STACKHOUSE.

Report of The Chief Chemist

Clemson College, S. C., August 30, 1920.

Dr. W. M. Riggs, President,

Clemson College, S. C.

Dear Sir:

I respectfully submit the following report of the work on commercial fertilizers, waters, etc., done for the Board of Trustees, Fertilizer Control, and for the citizens of the State, and of the referee and collaborative work, during the year ending June 30th, 1920. For the sake of comparison the figures for last year are given side by side with this year:

| | 1918-1919 | 1919-1920 |
|---|------------|------------|
| Official fertilizer samples ----- | 1301 | 1668 |
| Farmers' samples of fertilizers ----- | 136 | 134 |
| Ores, minerals, etc., for identification ---- | 35 | 25 |
| Waters ----- | 58 | 45 |
| Limestones, marls, and lime ----- | 2 | 6 |
| Ashes (wood, peat, manure, moss, coal) -- | 6 | 1 |
| Assays for gold and silver ----- | 4 | 7 |
| Miscellaneous ----- | 23 | 55 |
| | <hr/> 1565 | <hr/> 1941 |

The most striking facts brought out by a study of this table are: First, that the number of official fertilizer samples has increased this season over last by 367, or about 28 per cent.; and second, that the total number of samples has increased by 376, or about 24 per cent. over last season. The table also shows that the number of miscellaneous samples has increased about 58 per cent. this season over last. This increase in miscellaneous samples was largely due to the anxiety of farmers about the presence of borax in fertilizing materials.

DISCUSSION OF THE RESULTS OF THE ANALYSES

The following discussion of the results of the analyses of the official samples of fertilizers inspected during the season 1919-20 is taken from the annual report of the analytical work of the Chemical Department made to the President of the College by the Chief Chemist:

OFFICIAL FERTILIZER SAMPLES
CLASSIFICATION

| | 1918-19 | 1919-20 |
|---|------------|------------|
| Complete fertilizers ----- | 549 | 1001 |
| Home mixtures ----- | 1 | 0 |
| Special mixtures (phos. acid and ammonia) ----- | 358 | 284 |
| Acid phosphates ----- | 69 | 81 |
| Acid phosphates with potash ----- | 6 | 14 |
| Cotton seed meals ----- | 204 | 95 |
| Nitrate of soda ----- | 11 | 41 |
| American potash ----- | 49 | 14 |
| Foreign potash ----- | 0 | 75 |
| Dried blood ----- | 15 | 4 |
| Fish ----- | 11 | 43 |
| Tankage ----- | 8 | 1 |
| Sulphate of ammonia ----- | 1 | 0 |
| Miscellaneous ----- | 19 | 15 |
| | <hr/> 1301 | <hr/> 1668 |

DEFICIENT SAMPLES

Of the 1668 samples above listed, seventeen are omitted from the discussion which follows. These seventeen samples are:

Nine complete fertilizers and one cotton seed meal, the analysis of which for good and sufficient reasons were not published by the Secretary of Board of Fertilizer Control; two samples each of castor pomace and ground phosphate rock; one sample each of duplex basic slag, nitropo (a mixture of nitrate of soda and nitrate of potash), and a nitrate of soda without guarantee.

Of the remaining 1651 samples 327 fell below the commercial value based on the guarantee. They were as follows:

| | |
|---|-----------|
| In available phosphoric acid ----- | 35 |
| In ammonia ----- | 116 |
| In potash ----- | 41 |
| In available phosphoric acid and ammonia ----- | 45 |
| In available phosphoric acid and potash ----- | 16 |
| In ammonia and potash ----- | 59 |
| In available phosphoric acid, ammonia and potash -- | 15 |
| | <hr/> 327 |

Last season out of 1272 samples, 313, or 24.6 per cent. were deficient in commercial value based on guarantee, while this season the number so deficient is 327 out of 1651, or 19.81 per cent., a considerable decrease.

The extent to which these 327 samples fell below the guaranteed analyses in per cent. is as follows:

| | 0-0.10 | 0.1-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|-----------|-----------|-----------|-----------|------------|
| In available phosphoric acid | 26 | 27 | 24 | 24 | 13 |
| In ammonia ----- | 58 | 58 | 49 | 49 | 23 |
| In potash ----- | 20 | 24 | 34 | 28 | 22 |
| | <hr/> 104 | <hr/> 109 | <hr/> 107 | <hr/> 101 | <hr/> 58 |

This is a much worse showing than last season in all three ingredients, but especially in available phosphoric acid and ammonia.

Of the 327 samples which fell below the commercial value based on guarantee, 150 samples fell three per cent. or more below that value. They are as follows:

| | |
|---|----|
| In available phosphoric acid ----- | 12 |
| In ammonia ----- | 63 |
| In potash ----- | 16 |
| In available phosphoric acid and ammonia ----- | 17 |
| In available phosphoric acid and potash ----- | 3 |
| In ammonia and potash ----- | 29 |
| In available phosphoric acid, ammonia and potash -- | 10 |

150

Last season out of 313 samples which were deficient in commercial value based on guarantee, 144, or 46 per cent., were three per cent. or more deficient, while this season the number so deficient is 150 out of 327, or 45.87 per cent., a trifling decrease. As compared with the total number of samples, last season 144 out of 1301, or about 11 per cent., were three per cent. or more deficient in commercial value based on guarantee, and this season 150 out of 1668, or about nine per cent., a slight decrease.

The extent to which the 150 samples, which were deficient in commercial value three per cent. or more based on guarantee, fell below the guaranteed analysis in per cent. is as follows:

| | 0-0.10 | 0.1-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|----------|----------|-----------|----------|------------|
| In available phosphoric acid | 6 | 4 | 9 | 15 | 10 |
| In ammonia ----- | 9 | 19 | 24 | 43 | 23 |
| In potash ----- | 5 | 6 | 20 | 11 | 18 |
| | <hr/> 20 | <hr/> 29 | <hr/> 53 | <hr/> 69 | <hr/> 51 |

In addition to the 327 samples deficient in commercial value based on guarantee, there were 519 samples which were below guarantee in one or more ingredients, the deficiency being made up, however, by an excess of other constituents. They are as follows:

ANALYSES OF COMMERCIAL FERTILIZERS

65

| | |
|--|-----|
| In available phosphoric acid ----- | 167 |
| In ammonia ----- | 123 |
| In potash ----- | 193 |
| In available phosphoric acid and ammonia ----- | 9 |
| In available phosphoric acid and potash ----- | 17 |
| In ammonia and potash ----- | 10 |

519

Last season, out of 1272 samples, 362 or 28.45 per cent., were deficient in one or more ingredients, but not deficient in commercial value based on guarantee, while this season the number so deficient is 519 out of 1651, or 31.44 per cent., a slight increase.

The extent to which these 519 samples fell below the guaranteed analysis in per cent. is as follows:

| | 0-0.10 | 0.1-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|--------|----------|-----------|--------|------------|
| In available phosphoric acid | 51 | 47 | 39 | 41 | 13 |
| In ammonia ----- | 70 | 65 | 9 | 0 | 0 |
| In potash ----- | 53 | 79 | 56 | 29 | 4 |
| | 174 | 191 | 104 | 70 | 17 |

This is a much worse showing than last year both in available phosphoric acid and potash, though somewhat better in ammonia.

In connection with the subject of deficiencies, the results of some of the analyses this season as compared with last season are interesting:

| Acid Phosphates | 1918-1919 | 1919-1920 |
|---|------------|------------|
| Guaranteed 16 per cent -- | 69 | 76 |
| Deficient ----- | 9 (13.04%) | 19 (25%) |
| Deficient three per cent. or more ----- | 0 | 8 (10.53%) |

This shows a very great falling off in the quality of the acid phosphates on the market this season as compared with last, and is probably due in large measure to the delays in obtaining phosphate rock occasioned by strikes and transportation difficulties, necessitating hurried manufacture and the shipment of the product insufficiently cured, in order to meet the demands of the market. Three samples of the guarantee 14% were analysed this season, of which two met their guarantees and the third was not three per cent. deficient, while the single sample of this guarantee received last season was three per cent. deficient in commercial value. One sample of the guarantee 18% was analysed this season and was found deficient but not three per cent. There was also one sample of 11% guarantee analysed this season and found up to its guarantee.

Acid Phosphate with Potash.—Fourteen samples of these goods were analysed this season. One sample 9-0-3, deficient in potash, but not in commercial value. Two samples each: 8-0-3, one deficient in potash, but not in commercial value, and one deficient in phosphoric acid, but not three per cent. in commercial value; 10-0-2, one up to its guarantee, and one deficient in phosphoric acid, but not three per cent. in commercial value.

Three samples 10-0-3, of which two met their guarantees, and one deficient in potash, but not three per cent. in commercial value. Six samples 10-0-4; one up to guarantee; two not deficient in commercial value, but one of them deficient in potash and the other in available phosphoric acid; one deficient in available phosphoric acid, and in commercial value, but not three per cent.; two deficient three per cent. in commercial value, one being deficient in potash and the other in both phosphoric acid and potash. Last season we had six samples only of such goods: one each, 8-0-4 and 10-0-2, the former deficient in potash, but not three per cent. in commercial value, the latter well up to its guarantee; four samples of the guarantee 10-0-4, of which three samples were well over their guarantees, and the fourth deficient in potash, but not deficient in commercial value.

That the supply of potash was much larger this season than last is shown not only by the fact that there were more than twice as many acid phosphates with potash this season, but by the increase

in the potash salts from 49 to 89, and also by the increase of the samples of complete fertilizers from 549 last season to 1001 this year. The potash salts were chiefly foreign, 75 out of 89, and the 14 samples of domestic potash were at least half old stock brought over from last season. Though it is reported that the domestic potash producers were working to capacity last season, apparently very little of the product got on the southern fertilizer market as such.

In connection with the potash deficiencies not only in acid phosphates with potash, but also in mixed goods, the following summary for the last sixteen years may prove interesting. It is to be noted that none of the deficient samples here listed is deficient in commercial value:

| Year | Number of Samples | Deficient in One or More Ingredients | Deficient in Potash Only | Deficient in Potash Per Cent. |
|------|-------------------|--------------------------------------|--------------------------|-------------------------------|
| 1905 | 522 | 165 | 53 | 32.12 |
| 1906 | 655 | 201 | 62 | 30.84 |
| 1907 | 743 | 153 | 34 | 22.22 |
| 1908 | 713 | 161 | 54 | 33.54 |
| 1909 | 805 | 197 | 85 | 43.14 |
| 1910 | 1188 | 235 | 86 | 36.60 |
| 1911 | 1605 | 393 | 182 | 46.31 |
| 1912 | 1689 | 380 | 225 | 59.21 |
| 1913 | 1922 | 389 | 90 | 23.13 |
| 1914 | 2537 | 534 | 113 | 21.16 |
| 1915 | 1227 | 333 | 107 | 32.13 |
| 1916 | 1598 | 378 | 54 | 14.28 |
| 1917 | 1594 | 477 | 75 | 15.72 |
| 1918 | 1474 | 438 | 68 | 15.52 |
| 1919 | 1301 | 362 | 100 | 27.62 |
| 1920 | 1668 | 519 | 193 | 37.19 |

This summary shows that of the samples deficient in one or more ingredients, but not deficient in commercial value, a very large percentage are deficient in potash only. This deficiency was especially large during the years 1909 to 1912, inclusive. There was a marked drop in the years 1913 and 1914, but in 1915 the percentage deficiency was the same as in 1905. The figures for 1916 are not very significant on account of the small number of fertilizers on the market containing potash. The percentage deficiency in 1919 was considerably greater than in 1917 and 1918, when it was small and about the same. It will be noted that the percentage deficiency this year, 1920, is larger than it was in 1910, and higher than it has been since 1912, when the maximum of the results thus far recorded was reached.

Top Dressers:—The goods of this class falling into our hands this season have been of considerably better quality than was the case last season. We have had this year fifty-nine samples, of which twenty-one, or 35.6 per cent., were deficient in commercial value. and of these fifteen, or 25.42 per cent., were deficient three per cent. or more in commercial value, based on the whole number of samples. Last season out of thirty samples, seventeen, or 56.66 per cent., were deficient in commercial value, and of these thirteen were deficient three per cent. or more in commercial value, or 43.44 per cent. of the whole number.

One each of the following guarantees was analysed with the results indicated and a comparison with last year: 5-75-6.10-0, found up to guarantee, as was also the case last year; 4-7-2, not deficient in commercial value, but in potash, last year none of this guarantee; 4-7½-1, deficient in ammonia but not in commercial value, last year none of this guarantee; 8-7½-1, found up to guarantee, last year none of this guarantee; 7-8-2, deficient in ammonia, but not three per cent.; last year none of this guarantee; 3-8-0, deficient in ammonia, but not in commercial value, last year none of this guarantee; 2-10-2, deficient in ammonia, but not three per cent., last year none of this guarantee; 6-5-0, deficient in ammonia, but not in commercial value, last year one sample deficient in phosphoric acid, but not in commercial value. The variations in guarantees of this class of goods is chiefly in potash, and appears to depend on the supply of potash available.

Two samples of the following guarantee: 4-7½-2, one up to guarantee, and the other deficient in potash, but not deficient in commercial value.

Five samples of the guarantee 7-8-3, of which two were found up to guarantee; one deficient in ammonia, but not in commercial value; two samples three per cent. or more deficient in commercial value, one being deficient in ammonia, the other in ammonia and potash.

Six samples of the guarantee 4-7½-2½, one found up to guarantee; two not deficient in commercial value, but one deficient in ammonia and the other in potash; one not three per cent. deficient in commercial value, but deficient in ammonia and potash; two samples three per cent. or more deficient in commercial value, and deficient in ammonia and potash.

Nine samples of the guarantee 0-9-3, of which five were found up to guarantee; two not deficient in commercial value, but one deficient in ammonia, and the other in potash; two samples three per cent. or more deficient in commercial value, and deficient in ammonia.

Thirteen samples of the guarantee 4-7½-0, of which five were found up to guarantee; one not deficient in commercial value, but in ammonia; one not three per cent. deficient in commercial value, but in ammonia; six samples three per cent. or more deficient in commercial value; and all deficient in ammonia.

Sixteen samples of the guarantee 2-7-0, of which nine were found up to guarantee; three not deficient in commercial value, but two deficient in ammonia and one in phosphoric acid; one sample not three per cent. deficient in commercial value, but in ammonia; three samples three per cent. or more deficient in commercial value, and all deficient in ammonia. These goods were mixtures of fish tankage and nitrate of soda, but appear to have been sold under the name of "Palmetto Fish Tankage".

AVERAGES OF ANALYSES

Acid Phosphates

| | 1918-1919 | | 1919-1920 | |
|---|-----------|------------|-----------|------------|
| | Found | Guaranteed | Found | Guaranteed |
| Available phosphoric acid-- | 16.86 | 15.97 | 16.47 | 15.88 |
| Insoluble phosphoric acid-- | 0.59 | | 0.57 | |
| Total phosphoric acid---- | 17.45 | | 17.04 | |
| Special Mixtures (Acid Phosphate with Ammonia) | | | | |
| Available phosphoric acid-- | 8.84 | 8.22 | 8.52 | 7.94 |
| Insoluble phosphoric acid-- | 0.70 | | 1.04 | |
| Total phosphoric acid---- | 9.54 | | 9.56 | |
| Ammonia ----- | 3.39 | 3.35 | 3.72 | 3.69 |
| Complete Fertilizers | | | | |
| Available phosphoric acid-- | 8.82 | 8.25 | 8.64 | 8.09 |
| Insoluble phosphoric acid-- | 0.74 | | 0.80 | |
| Total phosphoric acid---- | 9.56 | | 9.44 | |
| Ammonia ----- | 2.95 | 2.82 | 3.27 | 3.06 |
| Potash soluble in water--- | 2.23 | 2.19 | 2.92 | 2.72 |
| Cotton Seed Meals | | | | |
| Available phosphoric acid-- | 2.34 | 1.50 | 2.61 | 1.51 |
| Ammonia ----- | 7.06 | 7.00 | 7.08 | 7.01 |
| Potash soluble in water--- | 1.47 | 1.00 | 1.51 | 1.01 |
| Nitrate of Soda | | | | |
| Ammonia (equivalent) --- | 18.59 | 18.02 | 18.47 | 18.03 |
| American Potash | | | | |
| Potash soluble in water--- | 29.77 | 29.81 | 37.26 | 37.79 |
| Kainits | | | | |
| Potash soluble in water--- | 0.00 | 0.00 | 13.82 | 12.95 |
| Muriate of Potash | | | | |
| Potash soluble in water--- | 0.00 | 0.00 | 46.78 | 47.21 |
| Manure Salt (Potash) | | | | |
| Potash soluble in water--- | 0.00 | 0.00 | 20.24 | 20.46 |
| Acid Phosphates with Potash | | | | |
| Available phosphoric acid-- | 10.36 | 9.67 | 9.82 | 9.65 |
| Potash soluble in water--- | 3.58 | 3.67 | 3.10 | 3.28 |

A striking feature of this table is the re-appearance of foreign potash on the market. Thees averages represent sixty-five kainits, four muriates, and six manure salts. During the seasons 1915-1916 to 1918-1919, inclusive, no foreign potash salts were received for analysis.

The averages of American potash represent forty-nine samples for 1918-1919, and fourteen samples for 1919-1920. About half of these fourteen samples were brought over from last season. So it is evident that the presence of borax in certain American potashes, which was believed to have injured crops last year, has made the consumer fight shy of all American potash, at least in this State.

There is also included in the above table for the first time in several years the averages of the acid phosphates with potash. These averages represent six samples for 1918-1919 and fourteen samples for 1919-1920.

The following table shows the averages of the analyses of fertilizers from the time the Board of Trustees of The Clemson Agricultural College of South Carolina took charge of the fertilizer inspection down to the present time, or from 1891 to 1920, inclusive.

YEARLY AVERAGE OF ANALYSES FROM 1891 TO 1920, INCLUSIVE.

| Season | Acid Phos- phates | | Acid Phosphate with Potash | | Complete Fertilizer | | | | Cotton Seed Meals | | | | Kainita | | Muriate Potash | | Nitrate of Soda | | Acid Phosphate with Ammonia | |
|-----------|----------------------|--|-------------------------------|--|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|----------------------|----------------------|--|----------------------|--------------------------------|-------|
| | Number of Samples | Available Phos- phoric Acid— Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Potash Soluble in Water— Per Cent. | Ammonia—Per Cent. | Potash Soluble in Water— Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Ammonia—Per Cent. | Potash Soluble in Water— Per Cent. | Number of Samples | Potash Soluble in Water— Per Cent. | Number of Samples | Ammonia—Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Number of Samples | Ammonia—Per Cent. | |
| 1890-1 | 49 | 13.02 | 19 | 11.84 | 1.65 | 173 | 9.34 | 2.69 | 1.96 | 30 | 8.37 | | 21 | 12.75 | 1 | 51.96 | 1 | 19.22 | 1 | |
| 1891-2 | 29 | 12.92 | 16 | 11.50 | 1.49 | 112 | 8.83 | 2.80 | 1.95 | 25 | 8.21 | | 18 | 12.51 | 1 | | | 18.63 | 1 | |
| 1892-3 | 48 | 12.82 | 26 | 11.63 | 1.22 | 150 | 9.00 | 2.91 | 1.65 | 20 | 2.62 | 8.40 | 1.32 | 12.05 | ..... | ..... | ..... | ..... | ..... |  |
| 1893-4 | 46 | 13.24 | 22 | 12.01 | 1.51 | 132 | 9.27 | 2.53 | 1.79 | 22 | 2.45 | 8.64 | 1.69 | 17 | 12.37 | ..... | ..... | ..... | ..... |  |
| 1894-5 | 46 | 13.55 | 15 | 12.09 | 1.66 | 87 | 9.42 | 2.55 | 1.77 | 33 | 2.58 | 8.19 | 1.66 | 19 | 12.30 | ..... | ..... | ..... | ..... |  |
| 1895-6 | 42 | 13.43 | 26 | 11.99 | 1.39 | 115 | 9.31 | 2.64 | 1.86 | 34 | 2.57 | 8.45 | 1.61 | 16 | 12.45 | ..... | ..... | ..... | ..... |  |
| 1896-7 | 59 | 13.61 | 34 | 12.06 | 1.61 | 117 | 9.55 | 2.70 | 1.91 | 40 | 2.53 | 8.69 | 1.64 | 22 | 12.44 | ..... | ..... | ..... | ..... |  |
| 1897-8 | 63 | 13.67 | 50 | 11.94 | 2.06 | 141 | 9.15 | 2.70 | 1.93 | 39 | 2.37 | 8.89 | 1.58 | 20 | 12.68 | ..... | ..... | ..... | ..... |  |
| 1898-9 | 73 | 13.74 | 68 | 11.77 | 1.99 | 134 | 9.32 | 2.73 | 2.21 | 40 | 2.76 | 8.25 | 1.75 | 14 | 12.78 | 2 | 51.93 | 2 | 19.23 | |
| 1899-1900 | 73 | 13.58 | 63 | 11.58 | 2.00 | 124 | 9.50 | 2.73 | 2.13 | 52 | 2.97 | 8.73 | 1.63 | 8 | 12.73 | 4 | 50.95 | 3 | 19.01 | |
| 1900-1 | 56 | 14.00 | 55 | 11.49 | 2.65 | 139 | 9.40 | 2.87 | 2.47 | 60 | 2.38 | 8.55 | 1.54 | 12 | 12.61 | 2 | 48.92 | 3 | 18.96 | |
| 1901-2 | 45 | 14.11 | 51 | 11.09 | 2.55 | 141 | 9.39 | 2.84 | 2.34 | 49 | 2.37 | 7.93 | 1.63 | 16 | 12.85 | 4 | 50.64 | 3 | 19.03 | |
| 1902-3 | 51 | 13.74 | 55 | 10.94 | 2.65 | 139 | 9.02 | 2.69 | 2.42 | 60 | 2.57 | 8.08 | 1.48 | 15 | 12.92 | 2 | 50.35 | 2 | 19.15 | |
| 1903-4 | 59 | 14.32 | 75 | 11.12 | 2.81 | 180 | 9.12 | 2.99 | 2.90 | 57 | 2.28 | 7.92 | 1.54 | 11 | 12.94 | 7 | 49.79 | 6 | 18.87 | |
| 1904-5 | 81 | 14.81 | 82 | 10.70 | 3.07 | 250 | 9.19 | 3.12 | 2.90 | 62 | 2.41 | 7.42 | 1.54 | 26 | 12.54 | 6 | 50.49 | 7 | 18.73 | |
| 1905-6 | 87 | 14.95 | 94 | 10.97 | 3.30 | 375 | 9.34 | 3.26 | 2.98 | 71 | 2.42 | 7.51 | 1.57 | 29 | 12.83 | 13 | 50.05 | 19 | 18.67 | |
| 1906-7 | 111 | 14.95 | 72 | 10.76 | 3.21 | 380 | 8.91 | 3.29 | 3.29 | 99 | 2.68 | 7.32 | 1.69 | 30 | 12.78 | 13 | 51.32 | 20 | 18.49 | |
| 1907-8 | 91 | 14.71 | 64 | 10.57 | 3.54 | 363 | 9.17 | 3.01 | 3.01 | 114 | 2.37 | 7.40 | 1.61 | 39 | 12.91 | 15 | 51.04 | 17 | 18.33 | |
| 1908-9 | 108 | 15.02 | 80 | 10.55 | 2.93 | 396 | 9.16 | 3.03 | 3.08 | 115 | 2.39 | 7.27 | 1.71 | 45 | 13.03 | 14 | 50.46 | 21 | 18.26 | |
| 1909-10 | 159 | 15.18 | 74 | 10.16 | 3.54 | 599 | 8.89 | 3.31 | 3.34 | 133 | 2.37 | 7.20 | 1.67 | 73 | 13.10 | 26 | 50.96 | 40 | 18.10 | |
| 1910-11 | 187 | 15.39 | 101 | 10.62 | 3.48 | 942 | 9.00 | 3.34 | 3.33 | 177 | 2.46 | 7.26 | 1.59 | 63 | 13.00 | 24 | 50.18 | 50 | 18.46 | |
| 1911-12 | 180 | 15.42 | 116 | 10.68 | 3.25 | 960 | 9.07 | 3.46 | 3.22 | 153 | 2.17 | 7.54 | 1.58 | 69 | 14.04 | 47 | 50.42 | 76 | 18.55 | |
| 1912-13 | 176 | 15.83 | 85 | 10.43 | 3.63 | 1199 | 8.86 | 3.54 | 3.57 | 171 | 2.56 | 7.37 | 1.65 | 69 | 13.72 | 29 | 51.51 | 48 | 18.64 | |
| 1913-14 | 229 | 16.10 | 91 | 10.63 | 3.93 | 1523 | 8.79 | 3.44 | 3.75 | 188 | 2.30 | 7.28 | 1.63 | 146 | 14.12 | 65 | 50.41 | 92 | 18.25 | |
| 1914-15 | 150 | 16.30 | 69 | 10.75 | 2.69 | 773 | 8.91 | 2.96 | 2.70 | 90 | 2.46 | 7.21 | 1.56 | 5 | 13.51 | 2 | 50.17 | 71 | 18.56 | |
| 1915-16 | 200 | 16.40 | 7 | 10.72 | 2.12 | 855 | 8.73 | 3.42 | 2.49 | 245 | 2.41 | 7.05 | 1.51 | 3 | 13.44 | 0 | ..... | 33 | 18.53 | |
| 1916-17 | 118 | 16.62 | 1 | 10.90 | 3.91 | 501 | 8.70 | 3.31 | 2.13 | 202 | 2.44 | 6.88 | 1.54 | 0 | 0.00 | 0 | 0.00 | 45 | 18.69 | |
| 1917-18 | 106 | 16.71 | 3 | 9.99 | 2.82 | 521 | 8.54 | 3.09 | 2.25 | 266 | 2.33 | 7.06 | 1.57 | 0 | 0.00 | 0 | 0.00 | 21 | 18.50 | |
| 1918-19 | 69 | 16.86 | 6 | 10.36 | 3.58 | 544 | 8.82 | 2.95 | 2.23 | 199 | 2.34 | 7.08 | 1.47 | 0 | 0.00 | 0 | 0.00 | 11 | 18.59 | |
| 1919-20 | 81 | 16.47 | 14 | 9.82 | 3.10 | 992 | 8.64 | 3.27 | 2.92 | 94 | 2.61 | 7.06 | 1.51 | 65 | 13.82 | 4 | 46.78 | 40 | 18.47 | |

In the following table the number of acid phosphates, acid phosphates with potash, complete fertilizers, cotton seed meals, and special mixtures (acid phosphates with ammonia) of each grade, according to guarantee, is placed side by side with the number found on analysis to belong to that grade, fertilizers having commercial values equal to those of schedule grades being placed in these grades:

| |High..... | |Standard..... | |Low..... | |
|--|----------------|-------|--------------------|-------|---------------|-------|
| | Claimed | Found | Claimed | Found | Claimed | Found |
| Acid phosphates (81) | 80 | 81 | 0 | 0 | 1 | 0 |
| Acid phosphates with potash (14) | 10 | 11 | 4 | 1 | 0 | 2 |
| Complete fertilizers (992) | 739 | 742 | 164 | 218 | 89 | 32 |
| Cotton seed meals (94) | 2 | 3 | 92 | 80 | 0 | 11 |
| Special mixtures (284) | 114 | 116 | 144 | 131 | 36 | 37 |
| Total (1465) | 945 | 953 | 404 | 430 | 116 | 82 |

These results are due to the following changes in grade ascertained by analysis:

| | Low to High | Low to Standard | Standard to High | High to Standard | High to Low | Standard to Low | No Change |
|--|-------------------|-----------------------|------------------------|------------------------|-------------------|-----------------------|--------------|
| | | | | | | | |
| Acid phosphates (81) | 1 | 0 | 0 | 0 | 0 | 0 | 80 |
| Acid phosphates with potash (14) | 0 | 0 | 2 | 1 | 0 | 2 | 9 |
| Complete fertilizers (992) | 4 | 67 | 18 | 17 | 1 | 15 | 870 |
| Cotton seed meals (94) | 0 | 0 | 1 | 0 | 0 | 11 | 82 |
| Special mixtures (284) | 0 | 6 | 11 | 9 | 1 | 14 | 243 |
| Total (1465) | 5 | 73 | 32 | 27 | 2 | 42 | 1284 |

This table shows that out of 1465 samples, 1284 were of the grade claimed for them, 110 were of a higher grade, and 71 of a lower grade than that claimed for them. Last season out of 1175 samples 988 were of the grade claimed, 130 were of a higher grade than claimed, and 57 of a lower grade than claimed. Expressed in percentages the figures for the season just before the outbreak of the Great War, and for the six seasons since that war began are as follows:

| Season | Of Grade Claimed | Higher than Grade Claimed | Lower than Grade Claimed |
|-----------------------|---------------------|------------------------------|-----------------------------|
| 1913-1914 -- -- -- -- | 88.42 | 9.99 | 1.57 |
| 1914-1915 -- -- -- -- | 85.95 | 6.37 | 7.67 |
| 1915-1916 -- -- -- -- | 82.04 | 13.50 | 4.45 |
| 1916-1917 -- -- -- -- | 88.57 | 8.62 | 2.80 |
| 1917-1918 -- -- -- -- | 87.75 | 9.66 | 2.51 |
| 1918-1919 -- -- -- -- | 84.08 | 11.06 | 4.85 |
| 1919-1920 -- -- -- -- | 87.65 | 7.51 | 4.85 |

This table shows that in the year previous to the Great War about 98 per cent. of the samples were of the grade claimed or higher, that in 1914-1915 there were about 92 per cent., in 1915-1916 about 95.50 per cent., in 1916-1917 and in 1917-1918 about 97 per cent., in 1918-1919 about 95 per cent., and this season about 95.2 per cent.

In order to compare the results of this season's grades with those of last season, the following summary is given:

| |1918-1919..... | | |1919-1920..... | | |
|-----------------------------------|---------------------|-------|-------|---------------------|-------|-------|
| | Claimed | Above | Below | Claimed | Above | Below |
| Acid phosphates | 69 | 0 | 0 | 80 | 1 | 0 |
| Acid phosphates with potash | 6 | 0 | 0 | 9 | 2 | 3 |
| Complete fertilizers | 476 | 35 | 33 | 870 | 89 | 33 |
| Cotton seed meals | 145 | 33 | 21 | 82 | 1 | 11 |
| Special mixtures | 292 | 62 | 3 | 243 | 17 | 24 |

Attention has been called in my last four annual reports to the number of Low Grade cotton seed meals on the market. It was noted that the number of such meals had decreased from 16.73 per cent. in 1915-1916 to 9.90 per cent. in 1916-1917, and in 1917-1918 fell to 4.31 per cent., but last season, 1918-1919, the percentage of Low Grade cotton seed meals rose to 10.5 per cent. This season the percentage of Low Grade meals is 11.7 per cent. Although we received for analysis less than half as many samples of cotton seed meal, owing to the high price no doubt, the ratio of Low Grade meals is a little higher than last season. On the whole, however, the meals seem to have been of better quality this season than last.

Nitrogen:—Deficiencies, Sources and Availability.

In connection with the subject of deficiencies in nitrogen, or equivalent ammonia, the following table is interesting. It is to be noted that none of the deficient samples listed is deficient in commercial value:

| Year | Number of Samples | Deficient in One or more Ingredients | Deficient in Nitrogen only | Deficient in Nitrogen Per Cent. |
|------|-------------------|--------------------------------------|----------------------------|---------------------------------|
| 1905 | 522 | 165 | 61 | 36.96 |
| 1906 | 655 | 201 | 87 | 43.28 |
| 1907 | 743 | 153 | 81 | 52.94 |
| 1908 | 713 | 161 | 77 | 47.82 |
| 1909 | 805 | 197 | 74 | 37.56 |
| 1910 | 1188 | 235 | 79 | 33.61 |
| 1911 | 1605 | 393 | 107 | 27.22 |
| 1912 | 1689 | 380 | 71 | 18.68 |
| 1913 | 1922 | 389 | 190 | 48.84 |
| 1914 | 2537 | 534 | 257 | 48.13 |
| 1915 | 1227 | 333 | 145 | 43.54 |
| 1916 | 1598 | 378 | 130 | 34.39 |
| 1917 | 1594 | 477 | 224 | 46.96 |
| 1918 | 1474 | 438 | 189 | 43.15 |
| 1919 | 1301 | 362 | 160 | 44.19 |
| 1920 | 1668 | 519 | 123 | 23.70 |

A decided improvement in the quality of ammoniated goods is shown this season, there being fewer samples deficient in ammonia only and not deficient in commercial value than has been the case since 1912, in which year the lowest recorded deficiency was found, 18.68 per cent., the only other year approaching this year's figures being 1911, when the deficiency was 27.22 per cent.

That organic ammoniates were scarce last season is shown by the large number of samples high in water-soluble nitrogen, or equivalent ammonia. While the number of samples of fish would indicate that a much larger quantity of this material was on the market than usual, certainly other organic ammoniates were not to be had in large amounts as fertilizer, chiefly, perhaps, because of the high price occasioned by their demand as feeds.

Of the 1252 samples of ammoniated goods examined for water-soluble nitrogen, the percentage of water-soluble is shown in the following table:

| Per Cent. of Water-soluble Nitrogen | Number of Samples |
|--|----------------------|
| Less than 10 | None |
| 10 to 20 | 3 |
| 20 to 30 | 10 |
| 30 to 40 | 10 |
| 40 to 50 | 29 |
| 50 to 60 | 98 |
| 60 to 70 | 275 |
| 70 to 80 | 448 |
| 80 to 90 | 264 |
| 90 to 100 | 115 |
| | <hr/> 1252 |

This would indicate that nitrate of soda and sulphate of ammonia had been used more freely than usual this season in mixed fertilizers, supplemented no doubt with some of the numerous manufactured tankages, other than animal or fish tankages. Many of these manufactured tankages contain a considerable amount of water-soluble nitrogen.

The nitrogen availability standards have not been changed for the past five seasons, and the same will be effective for the coming season, or due notice will be given should it be thought desirable or found necessary to make any changes. The present standards are as follows:

"1st. The Modified Neutral Permanganate Method of Street is still in force.

"2nd. An unmixed fertilizer material furnishing organic nitrogen must show an availability of 85 per cent. of the total organic nitrogen.

"3rd. The water-insoluble organic nitrogen in mixed fertilizers must show an availability of 75 per cent., by Street's method, if this water-insoluble organic nitrogen amounts to one-third or more of the total nitrogen found on analysis."

As was to be expected from the number of samples containing high water-soluble nitrogen, there were not many samples of ammoniated goods in which the water-insoluble organic nitrogen amounted to as much as one-third of the total nitrogen found on analysis. Out of the 1252 examined, only 267 contained water-insoluble organic nitrogen amounting to one-third or more of the total nitrogen found on analysis. Of these 267 samples, 262 were examined as to the availability of the water-insoluble nitrogen by Street's method, and only two samples were found below the requirements of the Board of Fertilizer Control. They were as follows:

| Sample No. | Brand Name of Fertilizer | Name and Address of Manufacturer | Per Cent Availability of Water-In- soluble Or- ganic Nitrogen |
|---------------|--------------------------|-------------------------------------|---|
| 689 | McCabe's Special Mixture | McCabe Fert. Co., Charleston, S. C. | 70 |
| 715 | Mutual 924 | Mutual Fert. Co., Savannah, Ga. | 53 |

Sources of nitrogen claimed in number 689 were: Blood, tankage and fish; in 715, Fish, blood, tankage, cottonseed meal and ammonium phosphate.

The results of the nitrogen availability work this season are certainly very satisfactory, and show that the manufacturers are con-

tinuing to use in the large majority of cases organic ammoniates of good grade. With the exception of the two samples given above, there were only three others in which the availability of the water-insoluble organic nitrogen fell below 80 per cent., and these three showed an availability of 76, 77, and 78 per cent., respectively, being over the 75 per cent. requirement.

Farmers' Samples of Fertilizers:

In addition to the official fertilizer samples collected by inspectors, there have been analysed this season 134 samples for purchasers, as provided for in Section 1540 of the Fertilizer Law.

Ores, Minerals, etc.:

Twenty-five specimens were received and examined as compared with thirty-five last season. They consisted as usual very largely of iron pyrites, micas, and clays.

Waters:

Of the forty-five samples of water listed, nine were sanitary analyses of the Barracks spring, nine of the stand-pipe water, regularly monthly examinations; nineteen were sanitary and six complete mineral analyses of waters sent in by citizens of the State; one partial analysis of a sample sent in by a citizen; one sample from Professor S. B. Earle's well on the campus.

Limestones, Marls, and Lime:

Six samples were analysed of materials of this nature this season as compared with two last season.

Ashes:

The fact that we received for analysis only one sample of ashes (wood) this season as compared with six last season, would indicate the waning of interest in possible potash sources with the advent of foreign potash once more.

Assays for Gold and Silver:

Seven samples were assayed for gold and silver this season as compared with four last season, indicating renewed interest in mining possibilities, though it seems to have been definitely established by geological surveys of the State, that gold and silver do not occur in our State in paying quantities.

Miscellaneous:

The miscellaneous samples include: one sample of a clover analysed at the request of Colonel Alan Johnstone; thirteen samples of fertilizers and fertilizer materials analysed for borax only; one sample of trona potash examined for borax and alum; one each, fertilizer for sources of ammonia, and for chlorine only; one sample of a food compound for fertilizer value; two samples of water for oil; one mineral or rock, analysed at the request of Senator E. D. Smith, the specimen occurring in Pennsylvania; four samples of boiler scale; one each, cotton waste, phospho-landplaster, burnt material from Colonial Apartments, Greenville, S. C., for fertilizer value, an off-color lard for determination of cause of same, soil for fertilizer value; six fertilizer check samples; one each, nitrogen availability of casein and of coca shells; seven samples of fertilizers analysed in co-operation with A. H. Ward, County Agent, Darlington County, all of which were especially examined for borax also;

ten samples for the Association of Official Agricultural Chemists in connection with the working out of a method for determining borax.

In addition to and not included in any of the work above set forth, we were called upon to examine twenty-six of the official fertilizer samples, collected by the inspectors, for borax, after the crop injuries in Darlington County, which appeared to be traceable to the use of certain American potash containing borax. Of these twenty-six samples, thirteen were potash salts, all so-called trona potash, which showed from 0.15 to over 15 per cent. of anhydrous borax. Ten of the thirteen samples of trona potash were found to contain from 10 to 16 per cent. of borax, with an average of over 12.50 per cent.; two of the thirteen samples analysed from 5.25 to 6.50 per cent., in round numbers, while one sample showed only 0.15 per cent. of borax. Eleven complete fertilizers gave on analysis only from 0.02 to 0.47 per cent. of anhydrous borax, while two samples of mixed goods guaranteed to contain available phosphoric acid and ammonia only gave from 0.00 to 0.04 per cent. of borax.

Distribution of the Work:

The fertilizer analyses were made by Messrs. Robertson, Foy, and Freeman. Mr. Inman examined several samples of fertilizers for sources of ammonia, upon request of purchasers.

All of the miscellaneous work was done by Mr. Freeman, excepting the borax determinations, which were made by Mr. Foy, or by Dr. Lipscomb and his assistant, Mr. Watkins.

All of the determinations of nitrogen availability, and of water-soluble nitrogen, indeed all of the work involving nitrogen determinations, was done by Mr. Robertson.

It gives me pleasure to be able to say that all of the work has been faithfully and efficiently performed, and apparent harmony and hearty co-operation has prevailed throughout the year.

Respectfully submitted,

R. N. BRACKETT,

Director and Chief Chemist.

Report of The State Entomologist

Dr. W. M. Riggs, President,
Clemson Agricultural College,
Clemson College, S. C.

Dear Sir:

We submit herewith the annual report of the work of the South Carolina State Crop Pest Commission for the period beginning July 1, 1919, and ending December 1, 1920. As the Crop Pest and Disease work is prosecuted with funds made by direct legislative appropriations, it is the intention to have the period covered by this report brought into conformity with the State's fiscal year which ends on December 31, 1920.

The work was prosecuted along the same lines as heretofore, but the responsibilities in the various sections of this service considerably increased and decidedly greater efforts were required to meet the increasing demands made upon this Commission. The general policy of the service has not been altered and no change is contemplated owing to the satisfactory progress made during the past year.

Several serious pests of foreign introduction have assumed a very threatening aspect, taxing the vigilance of the quarantine officers.

NURSERY INSPECTION

The intra-state nursery inspection work has not increased owing to the small number of nurseries in this State. The great bulk of nursery stock shipments are interstate and the principal efforts in nursery quarantine work are directed to stock coming into the state. Efforts are continually in progress to secure greater protection against the introduction of pests from points outside of this state, and owing to the great predominance of interstate shipments this phase of the work is especially exacting. There is an embarrassing lack of uniformity in the forms of certificates used by the various states, and this fact is receiving increased attention by quarantine officers due to increasing activities in the nursery trade. This problem of an efficient and satisfactory standardization of nursery inspection laws is receiving serious attention by the Association of Cotton States Entomologists, the nurserymen's associations and leading nurserymen. The adoption of uniform regulations and

tags by the Southern states will simplify operations and will, no doubt, bring about the closest possible cooperation among the various agencies of the several states interested.

Perplexing problems arise in the nursery trade which are apparently foreign to the existing quarantine laws. For example, it is yet a common occurrence for shipments to be transported into and within the states, in which the plants are not true to variety as ordered. The average purchaser is not able to judge whether the material received represents the varieties ordered or some other varieties. Only in case of certain plants would it be possible to discover unscrupulous dealings of this kind before the tree comes into bearing. The same is true of seedlings. This Commission is frequently called upon for assistance in adjusting controversies arising from the discovery of unscrupulous acts of the nurseryman.

It is not believed that transactions of this nature come within the jurisdiction of this Commission. The introduction of injurious diseases and insect pests constitutes a nuisance with which the Commission is charged to deal by the Crop Pest Act of 1912; while, on the other hand, a shipment containing materials untrue to name constitutes a transaction between the buyer and the seller which is amenable to law aside from the Regulations of the South Carolina State Crop Pest Commission.

Nursery inspection and quarantine work during the past year has been marked by a general inclination toward the adoption of uniform protective measures throughout the Southern states, and we believe that this movement will result in a new development in quarantine service along more fundamental lines than it was possible to attain heretofore.

SWEET POTATO ROOT BORER

The sweet potato root borer has so far failed to gain a foothold in this state. The nearest point of its occurrence at this time is Charlton County, Georgia. Besides Texas, Louisiana and Mississippi, the pest occurs in a number of counties in Florida. One Florida county, bordering on the Georgia line, is infested. Owing to the fact that the predominating portion of inter-state movements of sweet potato slips for planting originates in Georgia and Florida, it is necessary for the Crop Pest Commission to employ the greatest vigilance in the execution of the sweet potato quarantine.

Among the sweet potato insects the root borer is supreme and it constitutes one of the most serious Agricultural pests of the South. With the increase in sweet potato growing as one of the diversified crops under boll weevil conditions, the introduction of this pest would be especially serious.

The inspection in sweet potato quarantine involves the examination of the tubers in storage before bedding and also the inspection

of the plant beds. Although this quarantine gave rise to misunderstandings, yet after its purpose was once understood the Commission enjoyed the undivided support of our people.

SWEET POTATO DISEASES

The majority of farmers and growers of sweet potatoes in South Carolina have during the past few years adopted the practice of buying plants from plant growers rather than bed the potatoes and propagate plants for their own needs. This has resulted in the development of the sweet potato plant business as a large industry in certain sections of the South.

The average grower of plants pays little attention to diseases which are carried on the seed potatoes and which might be carried to the field on the slips. As a result of this practice, our common sweet potato diseases have become wide-spread and are causing enormous losses every year.

These practices have also resulted in the introduction of stem rot and soil rot, two destructive diseases not wide-spread in this state.

In order to aid in the control of these diseases and prevent their further spread, the Crop Pest Commission has adopted regulations prohibiting the sale and transportation of plants known to be diseased. The inspector of the Commission inspects the seed potatoes before they are bedded and gives instructions to the growers as to seed treatment methods and bedding practices necessary in order to grow disease-free plants. The plant beds are again inspected before the plants are ready to ship, and if they are found free from disease, the grower is issued permit tags, which are attached to all packages when they are prepared for shipment by mail, express, or freight.

The majority of sweet potato plants offered for sale in the South last year were produced in Georgia and Florida. The rules of the Commission prohibit the shipment of plants into the state unless pathologists and entomologists of the state in which the shipment originates certify to their freedom from injurious insects and diseases.

Some difficulty has been experienced in getting the inspection machinery in other states to function in this respect, and we have been forced, in a few instances, to deny permits to growers in Georgia and Florida because they could not get the required inspection made by their state officials. Since the growers and quarantine officers of other states have learned of our regulations and our determination to enforce them, we are securing closer cooperation along this line.

THE COTTON BOLL WEEVIL

The dispersion movement of the cotton boll weevil during the fall of 1919 was one of the largest during its history, as can be seen by examining the accompanying map showing the dispersion of the weevil since its entrance into South Carolina at Daufuskee Island in the fall of 1917. The migration was an entirely natural one due to the erratic sequence of wet and dry weather, which caused a rapid falling off of square formation. The square is the weevil's favorite food, and any abrupt or serious reduction in the number of squares will cause the weevil to migrate for food. Lack of food, however, is not the only cause for migration. Dispersion takes place every fall, but the amount of new territory covered varies somewhat from year to year.

The winter of 1919-20 was not severe from an insect standpoint, and no death rate in hibernation above the normal could have been expected. The line of distribution, therefore, held during the growing season of 1920 so that the expected fall migration practically covered the remainder of the cotton belt of the state.

Assuming that the boll weevil will respond to climatic conditions in South Carolina in a similar manner as it has done over the Gulf States through past years, we have a basis from which we can calculate approximately what development may be expected in 1921. It may be set down as a general rule that the weevil rarely does serious injury during the season following the fall when it first appears in any given locality. Some damage may be expected the second year after its first appearance while serious damage may be expected during the third year provided that the pest does not receive a setback in the meantime. Probable damage and probable dispersion are two elements of the greatest importance in determining policies in the operation of the quarantine in the most logical and effective manner.

The boll weevil crossed the Rio Grande River twenty-seven years ago and after it became thoroughly established in Texas it started on an eastward course, migrating parallel to the Gulf Coast line; and as this course was pursued during a period of fifteen years, many people became accustomed to the habit of interpreting damage on the basis of latitude. From 1904 to 1917 the boll weevil damage and the parallels of latitude travelled together until finally they reached the Savannah River. But owing to the change of the direction of the coast line, the isotherms, or lines of equal temperature, also changed their course, thus creating new conditions in the Carolinas for the weevil to work under. Furthermore, the weevil had reached the Sea Island cotton belt, giving the Sea Island cotton the first opportunity to exhibit its behavior under weevil attacks.

The climatic conditions in South Carolina are different from the average conditions under which the weevil has worked heretofore. The rainfall of the state during the growing season, June, July and August is comparatively heavy, making conditions favorable to the development of the weevil. A feature of the boll weevil work which charged this service with great responsibility was the proper guidance in the preparation for poisoning and the actual poisoning work in 1920. It was necessary for the situation to be studied from the following angles:

First, the possible damage of the insect in 1920 in the different sections of the state.

Second, the correct amount of proper calcium arsenate which would possibly be available in the market.

Third, the number of properly constructed machines possibly available in the market.

Fourth, the labor conditions on South Carolina farms and the probable cotton market.

After a most careful study of the work on boll weevil poisoning, it became apparent that while this method was giving promise of success as a factor in cotton boll weevil control, it could not be overlooked that at the present stage of development poisoning here constituted most complicated and serious operations. The strongest and most conservative advocate of the poisoning had learned that the operation must be thoroughly completed in every step, and if this is not done then entire failure may be expected. The important fact was emphasized that an over-allotment of acreage per machine be absolutely avoided as this constituted one of the easiest ways in which to fail. These studies are of the greatest importance to the farmers, crushers, and others interested in the cotton industry in planning developments for several years in advance. It was, therefore, of the greatest importance especially on account of the great responsiveness of our farmers that the development of the poisoning work in this state be thoroughly understood and prosecuted in the most conservative manner. The position taken by this Commission was beset with many difficulties and led to many serious controversies between officials and manufacturers, merchants and the farmers.

Our people were warned early in the season in regard to the probable shortage of satisfactory dusting machinery. It was pointed out that there would not be an over-supply of traction machines but that there were available a large number of hand dusters for which excessive allotments in acreage were being made. It was emphasized that poisoning in general would probably have little influence on the boll weevil situation in 1920; first, because of the probable inability to secure the necessary number of dusting ma-

chines; secondly, because of the scarcity of labor; and, thirdly because of the limited acreage on which cotton dusting would yet be profitable in this state. It was necessary to emphasize that under favorable weevil conditions serious damage might occur in Beaufort, Jasper, Hampton, Charleston, Colleton and Barnwell Counties. In case of a wet season sharp damage might be expected also in Bamberg, Calhoun, Orangeburg and Dorchester Counties as well as in other coastal counties; the damage throughout the central portion of the state under any conditions would be light, while weevil injury could be safely ignored for the balance of the state in 1920.

THE PINK BOLLWORM

This pest has been mentioned in previous annual reports and in the last report it was explained that shipments of baled cotton from the Laguna district in Mexico had reached points in South Carolina in 1916. Owing to the crude methods of Mexican ginning, the danger of transporting the pink bollworm in this manner is especially great. The points in this state having received such shipments were systematically inspected throughout the seasons of 1918 and 1919.

New developments took place during the past season when the pink bollworm was discovered by the Federal Horticultural Board in three parishes of southern Louisiana. Heretofore infestation had been confined to limited areas in Texas and Louisiana, but the Louisiana infestation looked especially serious because of the fact that at some points it was very severe and apparently of comparatively long standing. Before the Louisiana infestation was discovered, a number of cars of cotton seed had been transported to various and sundry points in Louisiana and Texas, making it impossible for the time being to define with exactness the areas possibly infested by this pest. This situation, combined with the poisoning problem for the boll weevil, led to a meeting of the Cotton States Entomologists at Vicksburg, Mississippi, and Tallulah, Louisiana, on March 1, 2, and 3, 1920, for the purpose of exchanging views and of gaining a general understanding as to the best course to pursue in 1920. At this meeting there were representatives from practically all of the cotton states, consisting of Federal and State Entomologists and Pathologists, as well as manufacturers and representative planters. After a full report by these various representatives, the way for procedure became quite clear and definite plans of action were formulated for procedure in the work of cotton boll weevil poisoning and also for the handling of the pink bollworm situation.

The pink bollworm situation was aggravated in this state by the further discovery of the arrival of shipments of cotton material at various points in this state from August, 1917, to June, 1920. A

roster of these points is maintained in the office of this Commission, and systematic inspections are being continued in order that the pest may be discovered should it have been shipped in one of these consignments. It is believed that the danger from the shipments previous to 1917 is past, due probably in no small part to the severe winter of 1917-18; and investigations now are directed principally to the points that received later shipments. The discovery of this pest in its incipency would give the Commission the best opportunity for eradication work, as has been demonstrated in insect control work repeatedly in the past.

The pink bollworm is a pest in Egypt, Brazil and Mexico. While the Mexican situation cannot be taken as an index of what may be expected due to the unsettled conditions in that country, we do have records from Egypt and Brazil that admit of sufficient interpretation as to what may be expected should this pest reach full strength in the cotton belt of this country. With the appearance of this pest in this state, adding from thirty to fifty percent loss to that already sustained by the boll weevil after that pest had developed full strength, anyone may conjecture what the effect might be on the cotton industry of this state.

The situation was found to be especially serious, owing to the apparent inability to get the cooperation of the states of Texas and Louisiana in the prevention and the eradication of this pest. It was decided by the quarantine officials at the Vicksburg meeting that it behooved all of the Southern states besides Texas and Louisiana to take such action as might best prevent the introduction of this pest into their respective states. It was, therefore, agreed that a quarantine be established by all of the cotton states against the states of Texas and Louisiana and that this quarantine to be uniform among the various states. It was further agreed that this quarantine should be sufficiently drastic to serve the purpose for which it was intended, and that such readaptation would be made of the regulations as might be warranted after Texas and Louisiana had established the necessary quarantine and eradication services with assurances of maintenance. The pink bollworm regulations became effective in the various states approximately April first, 1920. The reasons for these regulations were explained in the press, and in this state this Commission received the usual cooperation.

The disturbing element in the execution of this quarantine was caused by the failure on the part of Georgia to adopt any quarantine regulations whatsoever. This enabled shipments from Texas and Louisiana to reach Georgia, from which points, therefore, material could be re-shipped into this state. But the necessity of such

quarantine was so apparent to the public that it became necessary for Georgia to adopt adequate quarantine regulations.

EUROPEAN CORN BORER

The European Corn Borer since our last annual report has spread over more territory and at this writing occurs in Eastern Massachusetts, Southern New Hampshire, Eastern New York and Western Pennsylvania. Since our last report quarantine regulations have been adopted by this Commission and which are in force and effect at this time. A copy of these quarantine regulations are appended to this report.

THE MEXICAN BEAN BEETLE (*Epilachna corrupta*)

In August, 1919, the presence of the Mexican bean beetle was reported from Alabama. It had spread over about a dozen counties of the north central portion of the state. According to Dr. Hinds, the State Entomologist of Alabama, it would appear that the pest was introduced since July, 1918 or 1919, in the vicinity of Birmingham and Blocton.

This destructive pest is not new to American entomologists. It has been known for years as an inhabitant of some of the high semi-arid regions of the west. It appears to have reached the United States from Mexico, but heretofore had not threatened its establishment in the humid sections of the east. It is a very heavy feeder on members of the legume family, preferring lima and snap beans.

Considering the very great importance of the legume family in southern agriculture, including beans, soybeans and cowpeas for both food and soil-building, it becomes apparent that this pest may become a greater enemy to this country than the Mexican boll weevil. The appearance of this pest in the Gulf states adds another danger to those already threatening our borders and demands increased efforts on the part of the State Crop Pest Commission in co-operation with the quarantine organizations of other states that hold this pest in check.

The appearance of these foreign introduced pests in American agriculture need not be taken as a surprise considering the greatly increased activities in interstate and international commerce in recent years and the fact that we had had no adequate Federal quarantine service until 1912. These problems in American agriculture are becoming more serious from year to year, and it requires the best organization of which the state is capable to cope with them.

THE JAPANESE BEETLE (*Pappilio japonica*)

The Japanese beetle at present occurs in several counties in central New Jersey and also in one county in eastern Pennsylvania. The quarantine regulations of the Federal Horticultural Board in

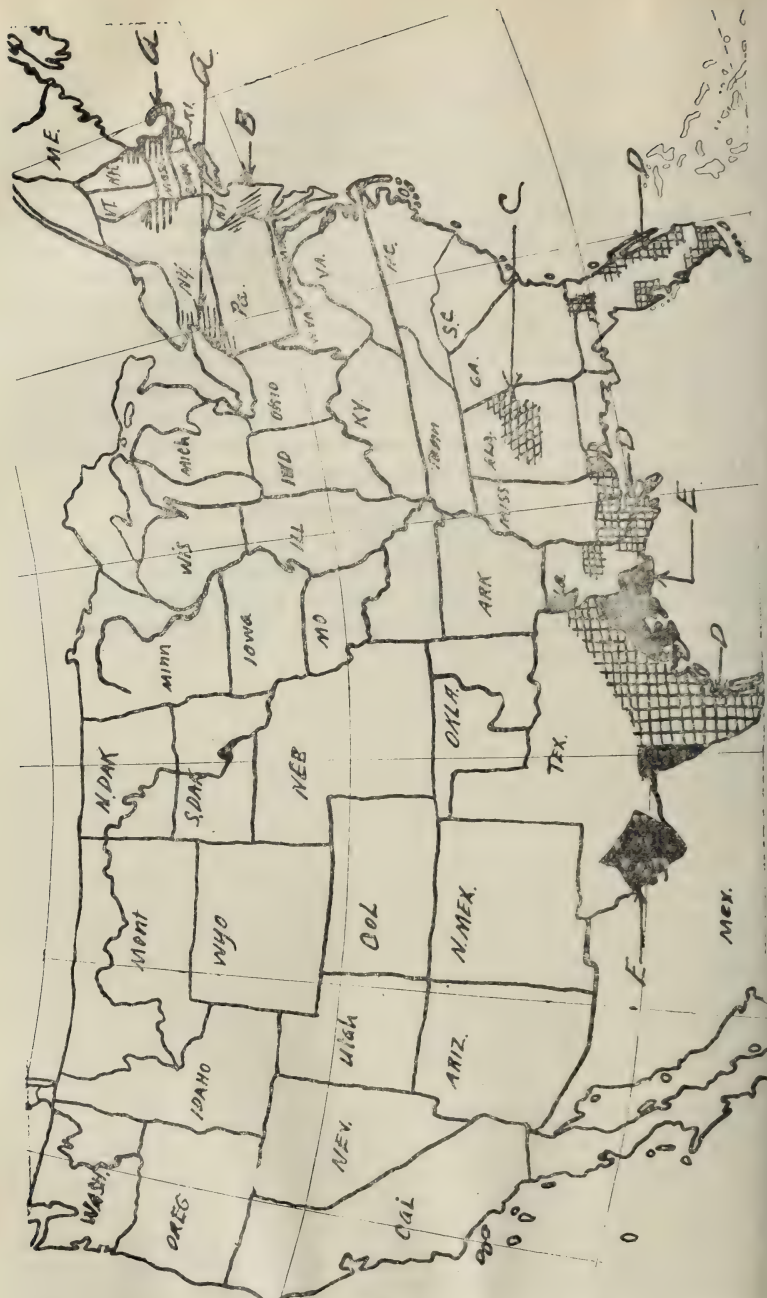
force at the present time, are considered adequate in dealing with this pest for the present time.

THE BROWN-TAIL MOTH AND THE GYPSY MOTH

The Gypsy moth and the Brown-tail moth quarantine is prosecuted in the same manner as heretofore. No shipments from moth areas are permitted by the Federal Horticultural Board unless accompanied by a certificate of inspection of that Board. Whenever a shipment is made to a point within the state of South Carolina, prompt notification is sent to the Crop Pest Commission by the Federal Horticultural Board giving full information as to the origin and the destination of these shipments in order to keep the officers of this Commission fully informed.

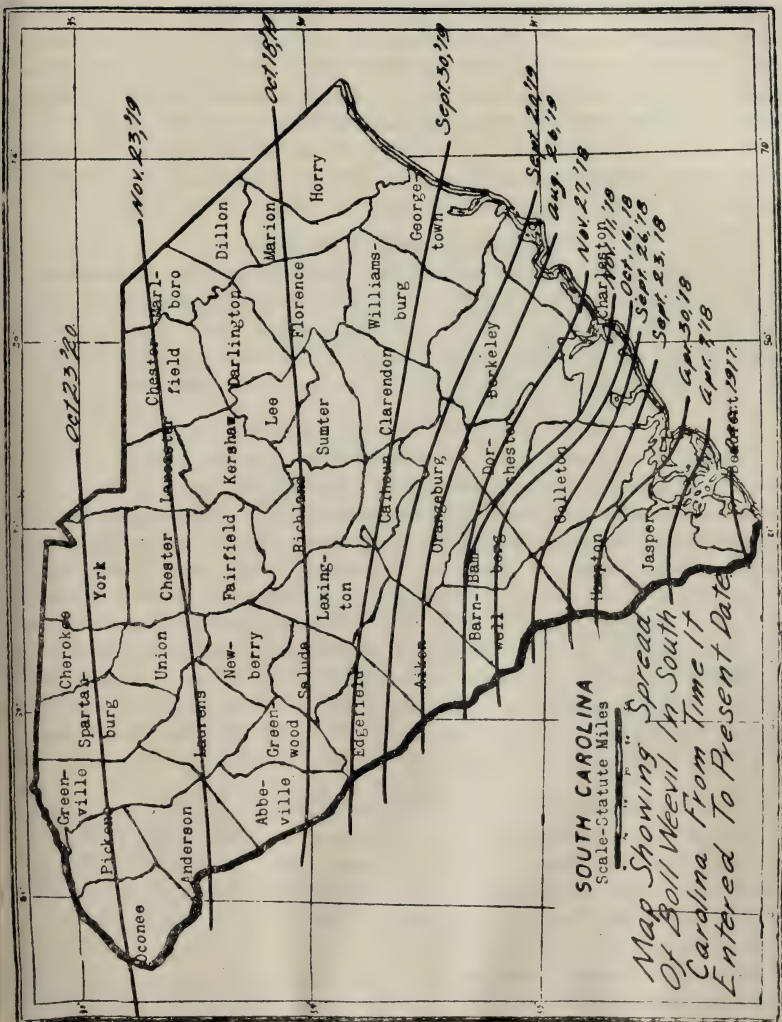
FOREIGN SHIPMENTS

There has been some modification in the quarantine of foreign shipments to the extent that such shipments as require inspection are handled at the port of entry. This, no doubt, is the safer course to pursue and facilitates these shipments, thus preventing losses that were unavoidable heretofore.



The shaded areas on the above map indicate areas of infestation by the following injurious insects:

- A. European corn borer.
- B. Japanese beetle.
- C. Mexican bean beetle.
- D. Sweet potato weevil.
- E. Pink boll worm.



COTTON DISEASES

The regulations relative to the sale and shipment of cotton seed for planting purposes continue to safeguard the farmers' interest by preventing the sale or distribution of seed infected with cotton anthracnose, and other dangerous and infectious diseases of this important crop. Inspections have been made during the year of fields from which growers wished to sell seed for planting purposes, and permits issued to those whose fields were found free from disease. This work is resulting in greatly lessening the damage done by cotton anthracnose, which is carried in the seed and which formerly caused more than a million dollar loss in South Carolina every year. Twenty-five thousand permit tags have been issued during the year in connection with this phase of the work.

UNIFORM REGULATIONS

The regulations as adopted by the State Crop Pest Commission were practically in uniformity with those of the other states. In the prosecution of this work the Commission had such effective co-operation of the Railroads, crushers, farmers and others that the quarantine was carried out with marked effectiveness.

MODIFICATION OF QUARANTINE

The states of Texas and Louisiana having convened their legislatures and enacted laws which appeared adequate to stay the progress of the pink bollworm for the time being, requested that the quarantine be modified as applying to these states. A hearing was held in Room eleven of the Federal Horticultural Board building at Washington, D. C., on July 20th, and a modification of the quarantine was agreed to, providing that the interstate shipments be handled entirely by the Federal Horticultural Board and that distribution to other states be made from established concentration points. This Commission therefore adopted a modification and accepted the regulations in force by the Federal Horticultural Board, and these regulations are appended to this report.

NUMBER OF PERMITS ISSUED TO DATE

To the date of this report, the following number of permits were issued. No systematic record has been kept of applications refused, but these were filed in the permanent files and can be secured should any legal proceedings be instituted at any point.

| | |
|---|---------|
| Nursery permits | 100,642 |
| Sweet potato permits | 35,500 |
| Cotton seed permits | 25,000 |
| Citrus permits | 25 |
| Special permits | 50 |
| Permits on account of pink bollworm | 208 |

MISCELLANEOUS INSECTS

This year was marked by an unusual scarcity of insect outbreaks. The cotton leaf worm, *Alabama argillaceae*, broke out in spots in some of the extreme coastal counties. The red spider occurred only sporadically. The cowpea curculio, *Chalcodermus aeneus*, so common every spring along the fall line of the state, engaged in its usual role; but owing to its size and shape, many farmers mistook it for the cotton boll weevil and serious efforts were required to disabuse the planters' minds of this impression in order to prevent the panicky destruction of cotton which had been scheduled for supersedure by other crops.

The most immediate need of the service is a qualified entomologist for the southern part of the state to engage in the boll weevil poisoning work and also to safeguard that section against the introduction of pink bollworm. In relation to cotton poisoning the season of 1920 was a very critical one and the developments in 1921 will have a most important influence in determining the progress of weevil poisoning during the critical period of the adaptation of our farmers to weevil conditions. Because of the inability of the Federal Bureau to co-operate as heretofore, this responsibility is greatly increased.

A developing need in this service is the availability of adequate stenographic and clerical help. The increased activities placed upon the specialists increases clerical responsibility, whereas all the time of Division experts is so necessary in a prompt and efficient execution of the needs of the service.

ORGANIZATION

Owing to the greatly increased demand in the development of this work, it has been necessary for the Crop Pest Commission to enlarge its organization. Mr. J. A. Berly, formerly Assistant Entomologist of the Experiment Station, owing to his adaptability to this work was transferred to the office of the Crop Pest Commission to be in charge of quarantine work. The appointment of Mr. J. L. Seal as Pathologist in Crop Pest and Disease Work has supplied a long felt need because pathology and entomology are two broad subjects developing with great rapidity, and these two subjects cannot be successfully combined in one and the same specialist. With the greatly increased activities in boll weevil work in this state, together with the threatening aspect of the pink boll worm situation, making the tracing of shipments continually necessary, it is essential that one specialist devote his entire attention to work in the field.

The organization of the South Carolina State Crop Pest Commission is as follows:

Hon. J. E. Wannamaker, Chairman, St. Matthews.

Hon. A. F. Lever, Peak.

Hon. Richard I. Manning, Columbia.

Hon. B. H. Rawl, Lexington.

Staff

Pathological Section.

H. W. Barre, State Pathologist, Clemson College, S. C.

C. A. Ludwig,* Asst. Plant Pathologist, Clemson College.

J. L. Seal,† Assistant Plant Pathologist, Clemson College.

Entomological Section.

A. F. Conradi, State Entomologist, Clemson College.

J. A. Berly, Assistant Entomologist, Clemson College.

H. S. McConnell,* Assistant Entomologist, Clemson College.

C. B. Nickels,‡ Assistant Entomologist, Clemson College.

Owing to the tense period through which we passed and the difficulty of securing efficient help at conservative salaries we were not able to complete the organization so as to prosecute all phases of the work as planned. It is hoped that this difficulty can be overcome during the next year due to the readjustment now in progress. For this reason one position was not filled until August 1, at which time Mr. C. B. Nickels was appointed for the field work on the boll weevil. The vacancy created by the resignation of Mr. J. L. Seal on July 1, 1920, we were not able to fill.

FINANCIAL REPORT

We submit the following report of the finances of the South Carolina State Crop Pest Commission. This report is submitted in two parts, the first covering the period from July 1, 1919, to April 1, 1920, at which time the appropriations made by the General Assembly for carrying on this work, became available; the second part covers the period beginning April 1, 1920, and ending December 31, 1920.

Part 1—July 1, 1919 to April 1, 1920.

Resources

| | |
|---------------------|-------------|
| College Funds ----- | \$ 5,527.50 |
|---------------------|-------------|

Expenditures

| | | |
|-----------------------------------|-------------|-------------|
| Personal Services, Salaries ----- | \$ 2,187.50 | |
| Wages ----- | 560.00 | |
| Supplies ----- | 456.00 | |
| Transportation, Travel ----- | 360.99 | |
| Equipment ----- | 62.89 | |
| Equipment ----- | 62.89 | 3,626.50 |
| | | <hr/> |
| Balance ----- | | \$ 1,901.00 |

* On part time.

† Resigned, July 1, 1920.

‡ Headquarters on James Island, season of 1920.

Part 2—April 1, 1920 to December 1, 1920.

Due to the necessity of submitting this report somewhat prior to the closing of the fiscal year the items are given for expenditures already incurred, and the estimated expenses (including outstanding bills), necessary to complete the work of the fiscal year.

| Resources | |
|--|-------------|
| Legislative Appropriations | \$10,000.00 |
| Expenditures | |
| Personal Services, Salaries paid | \$ 5,959.00 |
| Estimated to Dec. 31st. | \$ 6,310.00 |
| Wages paid | 128.35 |
| Estimated to Dec. 31st | 160.00 |
| Supplies, to date | 678.91 |
| Estimated to Dec. 31st | 800.00 |
| Transportation, Travel | 680.00 |
| Estimated to Dec. 31st | 950.00 |
| Equipment, to date | 147.28 |
| Estimated to Dec. 31st | 190.00 |
| | <hr/> |
| | \$ 8,410.00 |
| Unexpended balance, est. for Dec. 31, 1920 | 1,590.00 |
| | <hr/> |
| Total | \$10,000.00 |

CONCLUSION

The past year has been the best in the history of insect and disease quarantine in South Carolina and the prospects are encouraging. This quarantine work is becoming more and more educational in its nature. The success of this policy has been in many instances most conclusively demonstrated. The inspection and quarantine service is more and more being regarded as a partnership between the Crop Pest Commission and our people—all working in common for the best interests of our state. Among numerous examples of patriotic loyalty may be mentioned the co-operation given by the Cotton Seed Crushers. The rapid weevil dispersion of the fall of 1919 was unexpected and it severely upset plans and contracts. The Crop Pest Commission officers acted merely in an advisory capacity. They traced the weevil line and interpreted conditions, and our people acted with a sense of patriotism which, it seems to us, typified democracy in its finest form. Financial losses were numerous, due to a fine conscience on the part of our citizens who would prefer to lose heavily on doubtful shipments by preventing their movement rather than feel that they might be the cause of jeopardizing free territory with ship-

ments possibly infested. The progress in co-operation was a high spot of the year. Organization presents a solid front to the weevil's advance, and while it was not intended to make the lion and the lamb lie down together, while it was not intended that legitimate competition should be eliminated, yet many transactions completed in common council showed the avowed purpose of those fortunately situated to render any reasonable assistance to the less fortunate.

Yours very truly,

H. W. BARRE,
State Pathologist.
Nov. 22, 1920.

A. F. CONRADI,
State Entomologist.

REGULATIONS ADOPTED BY THE CROP PEST COMMISSION

South Carolina State Crop Pest Commission

Clemson College, S. C.

Quarantine on Account of Pink Bollworm

(Effective on and after Aug. 1, 1920.)

Whereas the states of Texas and Louisiana have made provision for effective cooperation with the Federal Horticultural Board of the United States Department of Agriculture in dealing with the Pink Bollworm (*Pectinophora gossypiella* Saunders) the South Carolina State Crop Pest Commission promulgates the following regulations effective on and after August 1, 1920. Regulations 1D and 2D effective on and after April 1, 1920, are hereby withdrawn. Until further notice the regulations effective on and after August 1, 1920 are as follows:

Regulations 1D (a). The infested, quarantined and regulated areas or zones designated by the Secretary of Agriculture in Rules and Regulations Supplemental to Notice of Quarantine No. 46 issued on the 21st day of July, 1920, and also such points or areas which may hereafter be designated as infested, quarantined or regulated areas by the Secretary of Agriculture shall constitute the officially recognized infested, quarantined or regulated areas of the South Carolina State Crop Pest Commission. That the South Carolina State Crop Pest Commission may regard any territory quarantined on suspicion pending action of the Secretary of Agriculture of the United States.

Regulations 2D (a). The movement of cotton, including all parts of the plant, seed cotton, cotton lint, linters, gin waste and all other forms of cotton lint, cotton seed, cotton seed hulls, cotton seed cake and meal, bagging and other containers of the articles enumerated in above said order, and also railway cars, boats, and other vehicles, which have been used in conveying cotton or cotton products grown in infested, quarantined or regulated areas, or which are fouled with such products, hay and other farm products, farm and household goods and farm equipment, into the state of South Carolina from infested, quarantined or regulated areas shall hereby be prohibited: **Unless** accompanied by a permit of the Federal Horticultural Board; or by a certificate of the Federal Horticultural Board stating that the material or articles have not been infested by the pink bollworm and that there is no evidence for suspecting such infestation.

Regulations 3D (a). On August 1, 1920 and subject to change according to the movements of the pink bollworm the infested, quarantined or regulated areas are as follows:

Infested areas:

Texas: All of the Counties of Orange, Jefferson, Chambers, Galveston and portions of the Counties of Brazoria, Harris, Liberty and Jasper.

Louisiana: Parishes of Cameron, Calcasieu and Jeff Davis.

Regulated areas:

The following districts in Texas and Louisiana are designated as regulated areas:

Texas: All of the counties of Orange, Jefferson, Chambers and Galveston and portions of Brazoria, Fort Bend, Harris, Liberty, Newton and Jasper Counties, included within the line indicated below:

From the mouth of Chocolate Bayou northward along the bayou to the bridge where the Elby-Knappe Road crosses the bayou south of Alvin near the S. T. Angier Survey; thence in a westerly direction to Sandy Point on the International & Great Northern Railway; thence west to the Brazos River to the Gulf; Colorado and Santa Fe Railway bridge west of Arcola; thence in a northeasterly direction to the intersection of the Ford Bend, Brazoria and Harris County lines south of Almeda; thence along Clear Creek to the Santa Fe crossing north of Pearland; thence in a northwesterly direction to Lynchburg; thence northward along the San Jacinto River to the Gulf Coast Railway, thence northwesterly along the Gulf Coast Railway to the Harris-Liberty County line; thence along the Liberty and Harris County line to Luce Bayou on the Ed King Survey; thence along Luce Bayou in a northeasterly direction to the north east corner of the Thomas Garrett Survey; thence in a nor-

therly direction along the east side of the Hugh Means Survey and the J. R. Fault Survey to the Southwest corner of the Manuel de los Santos Coy Survey; thence east along the south line on the Santos Coy Survey to the Hardin County line, thence southeast along the Hardin and Liberty County line, following that line to its intersection with Pine Island Bayou; thence easterly along Pine Island to the Southwestern corner of Jasper County; thence north along the western line of Jasper County to the south line of Tyler County; thence due east across Jasper and Newton Counties to the Sabine River; thence southward along the Sabine River to its mouth.

All of that area of territory within a circumscribed circle made by a radius of three miles using the Planters Oil Mill at Hearne, Texas, as a center.

All of the Counties of Maverick, Kinney and Val Verde.

All of the Counties of Presidio and Brewster.

All of the Counties of Ward and Reeves.

Louisiana: An area including a radius of ten miles around each of the following points: Gretna, Eunice, Broussard, Alexandria and Shreveport.

Regulations 4D (a). No restrictions are placed by these regulations on the inter-state movement of articles into the state of South Carolina enumerated in these Regulations from all points outside of the areas now or hereafter designated by the Secretary of Agriculture of the United States as in infested quarantined or regulated areas.

Regulations 5D (a). Whenever any articles or materials enumerated in these regulations are moved from free territory into infested, quarantined or regulated areas that such articles or materials shall then be held as being infested and will not be permitted to move into the state of South Carolina except on permit of the Federal Horticultural Board.

Explanation

The South Carolina State Crop Pest Commission is not only engaged in preventing the spread of destructive pests already within our borders, but the Commission is ever watchful of serious pests likely to threaten our state with invasion. Its regulations are promulgated in cooperation with the people of South Carolina who are partners in the quarantine service. In the operation of its regulations the Commission has always the intelligent, unanimous cooperation of the citizens of this state. Many hundred people representing diverse interests visit this Commission during the year for conferences, and these conferences are always welcomed and given serious and careful consideration. It is needless to explain that the procedure in this pink bollworm situation as it now exists

should be fundamentally governed by the Federal Horticultural Board. The Federal Horticultural Board is a patriotic and efficient guardian spreading its mantle of protection along our coast lines, our international boundaries and around the various states. It appears logical, therefore, that a situation like that which the pink bollworm presents demands that South Carolina give effective co-operation to the Federal Horticultural Board and to be governed in its actions in operating the pink bollworm quarantine by the Regulations promulgated by the Secretary of Agriculture. Those interested are requested to write to the Secretary of Agriculture, Washington, D. C., for a copy of the pink bollworm quarantine

EUROPEAN CORN BORER QUARANTINE

In order to prevent the introduction of the European Corn Borer (*Pyrausta nubilalis*) the importation into the State of South Carolina from all foreign countries, from the States of Pennsylvania, New York, Massachusetts and New Hampshire and from all States in which the European Corn Borer may hereafter be found to exist, of corn and broom corn, including all parts of ear and stalk (shelled grain excepted); rye, oats, wheat and other straw, sedges or rushes, whether used for or intended for packing or otherwise; celery, beans in the pod, beets with tops, spinach and rhubarb; cut flowers and entire plants of Chrysanthemum, astor, cosmos, zinnia or hollyhock. Also cut flowers and entire plants of gladiolus, canna, peony and dahlia and also all herbaceous plants or shrubs with hollow or pithy stems is hereby prohibited.

Report of The State Veterinarian

November 1st, 1920.

Dr. W. M. Riggs, President,
Clemson Agricultural College,
Clemson College, South Carolina.

Dear Sir:

I have the honor of submitting herewith a report of Live Stock Sanitary Control Work, including Tick Eradication, as conducted by Clemson Agricultural College and the Bureau of Animal Industry, U. S. Department of Agriculture, cooperating, in the State of South Carolina, for the period from January 1st, 1920, to October 31st, 1920, inclusive.

The establishment of the Clemson College Live Stock Sanitary Office in Columbia cooperatively with the Bureau of Animal Industry, U. S. Department of Agriculture for the conduct of Live Stock Sanitary Control Work has proven of undoubted value to the Live Stock Industry of the State.

While this office investigates and handles all contagious, infectious and communicable diseases of live stock, the three principal lines of work are: Tick Eradication, Tuberculosis Eradication, and Hog Cholera Control. The functions of these projects will be given under their respective headings.

TICK ERADICATION

This class of work is now confined principally to the counties situated in the coast region, commonly referred to as the Coastal Plain section, viz., Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Hampton, Horry, Jasper, and Williamsburg. In these counties it is the common practice for the cattle owners to permit their live stock to run at large. Owing to this "free range" condition prevailing to a greater or less extent in all the Coastal Plain counties, and the cattle being of a more or less wild nature, it is a very difficult matter to round them up for disinfection. Cattle that are not dipped regularly, and are permitted to stray or drift at will, are a great menace and drawback to the work for they continually reinfest the ranges.

During this year's work we found sections infested that had been free of ticks for two years. The infestation was due to ticky cattle straying over those sections during last fall and winter. Some of the areas that we freed of ticks this year will undoubtedly become reinfested this fall and winter. This will make it necessary to continue the dipping of all cattle in areas where free range conditions prevail, until the last tick has been eradicated.

Despite the unfavorable conditions we encounter conducting the work in the Coastal Plain sections, satisfactory progress has been and is being made. In those counties and areas from which the cattle tick has been completely eradicated, the introduction of pure bred sires and high grades has resulted in a wonderful improvement in the quality of the cattle.

With the advent of the cotton boll weevil the need for "more and better livestock" in the Coastal Plain sections is very apparent, and it is hoped that the cotton owners in the infested areas will take an even greater interest in Tick eradication next season, so that the entire coast region may be made safe for the importation of pure bred sires and in this way make it possible to establish a cattle industry that will be profitable. The fundamental of successful farming is based on good live stock, but this cannot be established until the cattle fever tick is eradicated.

Final work was also conducted in the counties of Aiken, Chesterfield, Clarendon, Edgefield, Fairfield, Florence, Kershaw, and Richland. In these counties a few premises are held under local quarantine until it can be determined that they are absolutely free of ticks. The work is practically completed in most of these counties, however, it will be necessary to make reinspections in some of them next year.

LIVE STOCK SANITARY CONTROL WORK

Tuberculosis Eradication:

This is a very important branch of our live stock sanitary control work, and is being conducted for the eradication of tuberculosis from our live stock and the establishment of Tuberculosis Free Accredited Herds.

During the past year the tuberculin test was applied to 394 herds containing 8123 cattle, 93 of which reacted and were disposed of in accordance with the state laws.

Since the inauguration of this work (November 1917), the tuberculin test has been applied to a total of 775 herds containing 18135 cattle, 379 of which reacted to the test.

At this time there are 45 herds in the state on the Tuberculosis Free Accredited Herd list, and 260 herds that are in the process of accreditation have passed one successful test.

The Accredited Herd Plan is a very important feature of the work. Before a herd can be accredited it must pass two successful tests, in not less than twelve months, under State and Federal supervision, and must be retested each twelve months thereafter in order to remain on the list. It thus is readily seen that it would be much safer to purchase cattle out of accredited herds or herds in process of accreditation, than out of those that are not.

While we have been conducting tests only on request in the past, yet, the principal breeding and dairying herds in the state are under our supervision. It is hoped that the appropriation next year will be sufficient to permit us to conduct an even larger amount of this class of work so that we may take up area work in a block of several counties.

Hog Cholera Control:

Hog cholera is a most serious disease of hogs and is found to a greater or less extent in practically every county in the state, but is more prevalent in the eastern and southern counties, especially in those where they have access to the free range.

During the past the vaccination of hogs, to protect them against cholera, has been done chiefly by the county agents, who were instructed under the supervision of the State Veterinarian's office. The appropriation made by the last General Assembly enabled us to employ a force of veterinarians to relieve the county agents of this class of work, and we have located them in the areas where their services are needed most. At this time we have veterinarians located at the following points: Aiken, Allendale, Bamberg, Ridgeland, Walterboro, Charleston, Georgetown, Lake City, Conway and Columbia.

During the past year hogs have been treated against cholera by the veterinarians of this office, county agents, and laymen working under the supervision of this office as follows:

| | Head |
|----------------------------------|---------------|
| Serum alone ----- | 5,499 |
| Serum and virus ----- | 38,113 |
| Serum and bacterins ----- | 214 |
| Serum, virus and bacterins ----- | 3,953 |
| Bacterins alone ----- | 2,027 |
| Total ----- | 49,806 |

INVESTIGATION OF OTHER DISEASES

In addition to Tuberculosis Eradication and Hog Cholera Control our Veterinarians also investigate and handle other contagious, infectious, and communicable diseases of live stock. During the past year the following diseases, some of which are not contagious or infectious, have been investigated.

Cattle

| | Cases |
|-------------------------------|-------|
| Hemorrhagic Septicaemia ----- | 28 |
| Forage Poisoning ----- | 9 |
| Necrotic Stomatitis ----- | 1 |
| Infectious Ophthalmia ----- | 1 |
| Black Leg ----- | 19 |
| Pneumonia ----- | 1 |
| Mycotic Stomatitis ----- | 2 |
| Parasitism ----- | 4 |
| Dermatitis ----- | 1 |
| Enteritis ----- | 1 |
| Traumatism ----- | 1 |
| Indigestion ----- | 2 |
| Infectious Abortion ----- | 2 |
| Parturient Paresis ----- | 1 |

Swine

| | Cases |
|-------------------------------|-------|
| Hemorrhagic Septicaemia ----- | 21 |
| Mixed Infection ----- | 35 |
| Forage Poisoning ----- | 6 |
| Necrotic Enteritis ----- | 1 |
| Necrobacillosis ----- | 2 |
| Pericarditis ----- | 1 |
| Parasitism ----- | 14 |
| Tuberculosis ----- | 1 |
| Indigestion ----- | 5 |
| Auto-Intoxication ----- | 2 |
| Synovitis ----- | 1 |
| Arthritis ----- | 1 |
| Laminitis ----- | 3 |
| Abscess ----- | 1 |
| Rheumatism ----- | 2 |
| Enteritis ----- | 2 |
| Anemia ----- | 6 |
| Pneumonia ----- | 6 |
| Peritonitis ----- | 2 |
| Infectious Abortion ----- | 1 |

Horses and Mules

| | Cases |
|------------------------|-------|
| Forage Poisoning ----- | 2 |
| Pneumonia ----- | 1 |
| Gastro-Enteritis ----- | 1 |
| Azoturia ----- | 1 |

Our veterinarians also make investigations and surveys of premises where it is suspected disease exists among live stock, are frequently consulted by live stock owners and give advice as to the best manner for handling live stock problems. Their activities along these lines during the past year are shown as follows:

| | |
|------------------------|------|
| Consultations ----- | 1958 |
| Investigations ----- | 186 |
| Sanitary Surveys ----- | 89 |

The Clemson College Live Stock Sanitary Office, in addition to the services of the veterinarians, also disseminates a great amount of information regarding live stock diseases through the distribution of bulletins, pamphlets, etc., and answers numerous inquiries by letter.

Serum, Virus and Biologics Distribution:

One of the most important functions of the Clemson College Live Stock Sanitary Office is the distribution of anti-hog cholera serum, virus, and biologics to the citizens of the state at cost. Our equipment permits us to carry large stocks of these products, and purchasing as we do in the open market we obtain them at the best prices, thus saving the live stock owners of this state thousands of dollars annually.

This office being centrally located enables us to make prompt deliveries to any section of the state. During the past year (November 1st, 1919 to October 31st, 1920) this office has shipped serum, virus and biologics as follows:

| | Mils | Value |
|------------------------------|----------------|-------------|
| Anti-hog cholera serum ----- | 4,157,210 | \$44,999.79 |
| Hog cholera virus ----- | 122,775 | 2,023.90 |
| Biologics * ----- | 20,472 (doses) | 3,378.05 |
| Syringes, etc. ----- | | 600.30 |
| Total ----- | | \$51,002.04 |

* The biologics distributed from this office are used for the prevention of hemorrhagic septicaemia (cattle and swine), mixed infection (swine), black leg (cattle).

TICK ERADICATION

U. S. Bureau of Animal Industry Expenditures

| Month | Salaries | Incidentals | Total |
|-----------------|-------------|-------------|-------------|
| January ----- | \$ 1,836.65 | \$ 1,008.47 | \$ 2,845.12 |
| February ----- | 1,848.34 | 878.30 | 2,726.64 |
| March ----- | 1,848.34 | 1,067.46 | 2,915.80 |
| April ----- | 1,808.32 | 1,046.73 | 2,855.05 |
| May ----- | 1,808.34 | 1,160.68 | 2,969.02 |
| June ----- | 2,633.34 | 1,106.31 | 3,739.65 |
| July ----- | 2,158.33 | 958.39 | 3,116.72 |
| August ----- | 2,112.09 | 981.78 | 3,093.87 |
| September ----- | 2,126.41 | 911.89 | 3,038.30 |
| October ----- | 2,112.09 | 945.94 | 3,058.03 |
| Total ----- | \$20,292.25 | \$10,065.95 | \$30,358.20 |

Salaries: Expenditures under this heading include salaries of supervising veterinarians, a clerk and cattle inspectors.

Incidentals: Expenditures under this heading include traveling expenses of supervising veterinarians, cattle inspectors and maintenance of office in Columbia, S. C.

Number of U. S. Bureau Men Employed and Designation

| Month | Veterinary | Cattle | Clerk | Total |
|-----------------|------------|------------|-------|-------|
| | Inspectors | Inspectors | | |
| January ----- | 4 | 12 | 1 | 17 |
| February ----- | 4 | 12 | 1 | 17 |
| March ----- | 4 | 12 | 1 | 17 |
| April ----- | 3 | 14 | 1 | 18 |
| May ----- | 3 | 14 | 1 | 18 |
| June ----- | 3 | 22 | 1 | 26 |
| July ----- | 3 | 14 | 1 | 18 |
| August ----- | 3 | 14 | 1 | 18 |
| September ----- | 3 | 14 | 1 | 18 |
| October ----- | 3 | 14 | 1 | 18 |

Supplementary Reports

| State Expenditures | | | |
|--------------------|-------------|-------------|-------------|
| Month | Salaries | Incidentals | Total |
| January ----- | \$ 120.00 | \$----- | \$ 120.00 |
| February ----- | 120.00 | ----- | 120.00 |
| March ----- | 120.00 | 810.63 | 930.63 |
| April ----- | 2,055.00 | 32.72 | 2,087.72 |
| May ----- | 2,311.00 | 205.86 | 2,516.86 |
| June ----- | 1,646.33 | 620.41 | 2,266.74 |
| July ----- | 2,514.33 | 531.38 | 3,045.71 |
| August ----- | 2,443.66 | 7.00 | 2,450.66 |
| September ----- | 2,235.67 | 347.37 | 2,583.04 |
| October ----- | 2,329.33 | 73.17 | 2,402.50 |
| Total ----- | \$15,895.32 | \$ 2,628.54 | \$18,523.86 |

Salaries: Expenditures under this heading include salaries of cattle inspectors and one clerk.

Incidentals: Expenditures under this heading include chemicals (for preparing arsenical solution to disinfect cattle), utensils and containers for same, printing regulations, quarantine and permit books, disinfection notices, etc.

Number of State Men Employed and Designation

| Month | Cattle | | Total |
|-----------------|------------|-------|-------|
| | Inspectors | Clerk | |
| January ----- | 0 | 1 | 1 |
| February ----- | 0 | 1 | 1 |
| March ----- | 0 | 1 | 1 |
| April ----- | 18 | 1 | 19 |
| May ----- | 20 | 1 | 21 |
| June ----- | 14 | 1 | 15 |
| July ----- | 22 | 1 | 23 |
| August ----- | 20 | 1 | 21 |
| September ----- | 19 | 1 | 20 |
| October ----- | 20 | 1 | 21 |

Force in Tick Eradication Work

(Paid Jointly by State of South Carolina and U. S. Dept. of Agri.)

| Position | Name | Salary |
|------------------------------|---------------------|----------------|
| 1. Inspector in Charge ----- | W. K. Lewis ----- | \$3,500 (year) |
| 2. Veterinary Inspector ---- | Z. C. Boyd ----- | 2,160 " |
| 3. Veterinary Inspector ---- | Clarke Hedley ---- | 2,100 " |
| 4. Veterinary Inspector ---- | F. S. Hope ----- | 2,100 " |
| 5. Cattle Inspector ----- | S. H. Williams ---- | 1,800 " |
| 6. Cattle Inspector ----- | W. F. Gaillard --- | 1,740 " |

| Position | Name | Salary |
|----------------------|---------------------|--------------|
| 7. Cattle Inspector | V. E. McCormack | 1,620 " |
| 8. Cattle Inspector | J. D. Limehouse | 1,440 " |
| 9. Cattle Inspector | Wade H. Jones | 1,380 " |
| 10. Cattle Inspector | E. J. Jenkins | 1,320 " |
| 11. Cattle Inspector | W. M. Barnwell | 1,080 " |
| 12. Cattle Inspector | G. S. Cuthbert | 1,080 " |
| 13. Cattle Inspector | J. E. Gillis | 1,080 " |
| 14. Cattle Inspector | W. H. Harrison | 1,080 " |
| 15. Cattle Inspector | J. C. Hoats | 1,080 " |
| 16. Cattle Inspector | M. B. Marvin | 1,080 " |
| 17. Cattle Inspector | A. A. Patterson, Jr | 1,080 " |
| 18. Cattle Inspector | E. E. Wyndham | 1,080 " |
| 19. Clerk | George Smith | 1,600 " |
| 20. Cattle Inspector | J. E. Bailey | 120 (month) |
| 21. Cattle Inspector | G. W. Hill | 120 " |
| 22. Cattle Inspector | A. G. Mitchum | 120 " |
| 23. Cattle Inspector | L. W. Avant | 110 " |
| 24. Cattle Inspector | J. C. Kinsey | 110 " |
| 25. Cattle Inspector | William Bivens | 100 " |
| 26. Cattle Inspector | E. W. Davis | 100 " |
| 27. Cattle Inspector | L. Y. Davis | 100 " |
| 28. Cattle Inspector | W. C. Gay | 100 " |
| 29. Cattle Inspector | J. K. Linder | 100 " |
| 30. Cattle Inspector | Theodore Malphrus | 100 " |
| 31. Cattle Inspector | P. M. Myers | 100 " |
| 32. Cattle Inspector | Bertie Nettles | 100 " |
| 33. Cattle Inspector | J. M. Rowell | 100 " |
| 34. Cattle Inspector | H. N. Sessions | 100 " |
| 35. Cattle Inspector | A. E. Smith | 100 " |
| 36. Cattle Inspector | C. C. Strobel | 100 " |
| 37. Cattle Inspector | F. H. Worthington | 100 " |
| 38. Cattle Inspector | W. C. Hills | 100 " |
| 39. Cattle Inspector | F. M. Johnson | 50 " |
| 40. Cattle Inspector | C. H. Marvin | 50 " |
| 41. Clerk | R. K. Donly | 1,600 (year) |
| 42. Cattle Inspector | J. O. Ackerman | 120 (month) |
| 43. Cattle Inspector | W. T. Rowell | 5 (day) |
| 44. Cattle Inspector | S. C. Johnston | 5 " |
| 45. Cattle Inspector | R. K. Johnston | 5 " |
| 46. Cattle Inspector | H. H. Hill | 5 " |
| 47. Cattle Inspector | J. E. Williams | 5 " |

The following statement shows the expenditures from various sources from 1907 to November 1, 1920:

Expenditures for Tick Eradication in South Carolina

| Year | U. S. Dept. of Agri. | Clemson College | State Appropri'n | County Appropri'n |
|------------------------|-------------------------|--------------------|---------------------|----------------------|
| 1907 ----- | \$ 5,125.00 | \$ 1,860.00 | \$ ----- | \$ ----- |
| 1908 ----- | 15,207.00 | 4,535.00 | ----- | ----- |
| 1909 ----- | 19,367.00 | 8,524.00 | ----- | ----- |
| 1910 ----- | 15,915.00 | 9,960.00 | ----- | ----- |
| 1911 ----- | 12,674.00 | 10,051.00 | ----- | ----- |
| 1912 ----- | 14,537.00 | 8,308.00 | ----- | ----- |
| 1913 ----- | 16,146.00 | 9,369.00 | ----- | 1,083.00 |
| 1914 ----- | 23,143.00 | 1,497.00 | 30,000.00 | ----- |
| 1915 ----- | 35,479.84 | ----- | 30,000.00 | ----- |
| 1916 ----- | 38,598.72 | ----- | 30,000.00 | ----- |
| 1917 ----- | 64,811.65 | ----- | 30,000.00 | ----- |
| 1918 ----- | 74,102.77 | ----- | 30,000.00 | ----- |
| 1919 ----- | 63,947.29 | ----- | 30,000.00 | ----- |
| 1920 (To Nov. 1) ----- | 30,358.20 | ----- | 18,523.86 | ----- |
| Total ----- | \$429,412.47 | \$54,104.00 | \$198,523.86 | \$1,083.00 |

LIVE STOCK SANITARY CONTROL WORK

U. S. Bureau of Animal Industry Expenditures

| | Salaries | Incidentals | Total |
|---|------------|-------------|-------------|
| January 1, 1920, to | | | |
| October 31, 1920, inclusive -- | \$7,717.73 | \$3,222.18 | \$10,939.91 |
| Salaries: Expenditures under this heading include salaries of four veterinary inspectors and one clerk. | | | |

Incidentals: Expenditures under this heading include traveling expenses of veterinary inspectors, office rent, telephone charges, etc.

Number of U. S. Bureau Employees and Designation

| Veterinarians | Clerk | Total |
|---------------|-------|-------|
| 4 | 1 | 5 |

State Expenditures

| | Salaries | Incidentals | Total |
|---|-------------|-------------|-------------|
| January 1, 1920 to | | | |
| October 31, 1920, inclusive -- | \$11,942.19 | \$5,671.44 | \$17,613.63 |
| Salaries: Expenditures under this heading include salaries of twelve veterinarians. | | | |

Incidentals: Expenditures under this heading include traveling expenses of veterinarians, office rent, etc.

Force in Live Stock Sanitary Control

Veterinarians ----- 12

Force in Live Stock Sanitary Control

(Paid jointly by State of S. C. and U. S. Dept. of Agri.)

| Position | Name | Salary |
|-----------------------------------|--------------------|------------|
| 1. Inspec. in Charge & State Vet. | W. K. Lewis | \$3,500.00 |
| 2. Veterinary Inspector | P. J. Gallagher | 2,100.00 |
| 3. Veterinary Inspector | L. S. Baer | 1,800.00 |
| 4. Veterinary Inspector | J. R. Ulrich | 1,680.00 |
| 5. Clerk (Steno. and Typewriter) | Margaret Robertson | 1,200.00 |
| 6. Assistant State Veterinarian | E. T. Fisher | 2,000.00 |
| 7. Assistant State Veterinarian | T. A. Jennings | 2,000.00 |
| 8. Assistant State Veterinarian | Emlen Wood | 2,000.00 |
| 9. Assistant State Veterinarian | S. M. Witherspoon | 1,800.00 |
| 10. Assistant State Veterinarian | R. W. Applegate | 2,000.00 |
| 11. Assistant State Veterinarian | M. L. Boyd | 2,000.00 |
| 12. Assistant State Veterinarian | H. S. Brundage | 2,000.00 |
| 13. Assistant State Veterinarian | R. A. Mays | 1,800.00 |
| 14. Assistant State Veterinarian | L. S. Merritt | 1,800.00 |
| 15. Assistant State Veterinarian | Fred Speer | 1,800.00 |
| 16. Assistant State Veterinarian | S. D. Shoulkin | 1,800.00 |
| 17. Veterinary Inspector | A. H. Logan | 2,100.00 |

The following statement shows expenditures from the year 1918 to October 31, 1920, inclusive:

| Year | U. S. Dept. of Agri. | State Appropria'n | Total |
|-------------------------|-------------------------|----------------------|-------------|
| 1918 ----- | \$ 3,243.81* | \$ 1,879.44 | \$ 5,123.25 |
| 1919 ----- | 7,418.80* | 9,954.50 | 17,373.30 |
| 1920 (to Oct. 31) ----- | 10,939.91 | 17,613.63 | 28,553.54 |
| Total ----- | \$21,602.52 | \$29,447.57 | \$51,050.09 |

* These amounts do not include the U. S. Department of Agriculture's expenditures in hog cholera work in South Carolina for the year 1918, or the first nine months in 1919, as this office has no record of the expenditures made by the U. S. Department of Agriculture for hog cholera control work in South Carolina prior to October 1, 1919.

HOG CHOLERA CONTROL—REINVESTMENT FUND

W. K. Lewis, Inspector in Charge and State Veterinarian.

| Employees | Title | Salary |
|----------------|-------|----------------------|
| J. E. Wilson | Clerk | \$1,800.00 per annum |
| J. M. Leaphart | Clerk | 1,200.00 per annum |

(The salaries of these employees are included in the cost of distributing serum, virus and biologics).

Respectfully submitted,

W. K. LEWIS,

Inspector in Charge and State Veterinarian.

FINDINGS OF THE BOARD OF TRUSTEES AFTER INVESTIGATION OF AFFAIR OF MARCH 10th, 1920.

Clemson College, S. C., March 15, 1920.

After a thorough investigation, in which representatives of the Senior and Junior Classes, such parents of Freshmen and Sophomore classes as presented themselves, members of the Discipline Committee, and all others who desired the opportunity, were heard, the representatives of the upper classes being heard both in open and in executive session of the Board, thus allowing them the fullest freedom from restraint in the expression of complaints and of opinions touching the situation, the Board finds the following facts:

1. On Sunday, March 7th, Cadet Hoffmeyer, head-waiter, and one of the dining room scholarship cadets, reported to the Commandant of the Corps, Colonel Cummins, that principally on account of the prevalence of influenza and mumps in the student body, the close approach of examinations, and the utter inability to procure outside labor, it was found that a number of tables were without waiters. The Commandant, recognizing the emergency, issued an order, with the full knowledge of the President of the College, (Sec. 1, Cadet Regulations), detailing six cadets each day to supplement the cadet waiter-force in the messhall, the order explicitly stating that it was issued to meet an emergency.

The scholarship waiter-cadets were paid twenty dollars per month for about four hours work per day. But the cadets affected by the emergency order were to do only dining-room service; that is, carrying food from the kitchen to the tables, and requiring not over fifteen minutes of extra time before each meal, and a small amount of service during the meal, and for which similar service the regular dining-room waiters were receiving six dollars per month.

The Board is convinced that this order carried no purpose to adopt a policy requiring of the cadets the performance of menial labor, but was issued to meet an emergency likely to arise in any institution of this size.

2. No complaint as to this order was brought to the attention of the authorities until Monday morning after breakfast, at which meal two of the cadets detailed were reported as failing to appear for duty, in violation of the order, whereupon the Commandant placed them in arrest, pending an investigation and possible charges.

Early Monday morning, the President of the College was waited

upon by the Senior Class Cooperative Committee and by the Sophomore Class Cooperative Committee, and acquainted with the fact that the cadets resented the order. (Sec. 323 Regulations.) The President, in keeping with the college policy to avoid detailing students to do any labor other than college work where paid labor could be obtained, held a conference with the Commandant for the purpose of adjusting the matter to the satisfaction of the students and the necessity of the emergency.

To that end, all former cadet waiters and dining-room scholarship cadets in the college were summoned. About forty responded. Upon the raising of the pay of scholarship waiters to thirty dollars per month and dining-room waiters to nine dollars per month, enough cadet waiters were obtained for the work to relieve the emergency, and at the dinner hour on Monday, the emergency order was revoked, thus leaving it in force only twenty-four hours.

The two violators of the emergency order under arrest were released on Monday at 4:43 P. M., without punishment, the ends of discipline having in the opinion of the authorities been met.

3. Prior to the release of the two cadets above mentioned, the Commandant early in the afternoon had detected a great number of cadets wearing red badges and yelling "Bolsheviki". The only cadet he was able to identify was Cadet Crosland, who was promptly put under arrest for violation of the Regulations governing the cadet corps. Copies of these Regulations are available to every cadet, each of whom is required to know their contents.

Sometime before the issuance of the emergency order, Cadets Green and Dawes were being held in arrest for offenses entirely apart from the emergency order or the occurrences growing out of its issuance. These cadets, Green and Dawes, were found to have broken arrest, in violation of Paragraph 291, Cadet Regulations, and were preparing to leave college. During this time there was great disorder about the guard-room, and the Commandant ordered all cadets to their rooms. This order was obeyed. Later, Cadets Green and Dawes reported to the Commandant that they had been persuaded by their classmates to remain at college. They were placed in close arrest for violation of one of the most important of the college Regulations, for a cadet in arrest is bound by his honor under the Regulations to observe it, and it cannot be breached as was done by these two cadets, except by a breach of the Regulation, and the honor obligation to observe it.

These three, Cadets Green, Dawes and Crosland, were tried in the usual way by the Discipline Committee of the college on Tuesday night, the former two pleading guilty to the charge against them and being dismissed therefor, while the last, Crosland, was acquitted of the charge of disrespect upon his statement that he did

not see the Commandant, but was found guilty of being a party to disorder on the campus.

4. On Wednesday, March 10th, immediately after dinner, the Freshman and Sophomore classes met on Riggs Athletic Field, in violation of Paragraph 246, Cadet Regulations, and from there proceeded to the entrance of the main building. The President of the college, Dr. Riggs, was called upon to appear before these classes, and through their spokesman, Cadet Turner of the Freshman Class, it was demanded of him that he immediately reinstate Cadets Green and Dawes, and relieve Cadet Crosland from further punishment. President Riggs explained to these classes that neither he, the Discipline Committee, the Faculty, nor any other authority at the college was empowered either to entertain a request coming in such a manner, nor to act upon it. (Sec. 324, Cadet Regulations). Paragraph 324 above referred to reads as follows:

"The President, the Discipline Committee and the Board of Trustees shall not consider any petition or protest, verbal or written, from any class or other student organization, relating to the punishment of any cadet by the proper authorities, and any such petition or protest is strictly prohibited. Only petitions or protests from a parent, legal guardian, or a cadet of age shall be given consideration by the President, Discipline Committee or Board of Trustees."

The President referred to this Regulation, stating clearly to them that the Regulations positively prohibited any of the college authorities from considering any petition or protest from a class or student organization relating to the punishment of a cadet; but pointed out to them that the Regulation provides that such protest must be presented to the proper authorities of the college only by the cadet himself, his parent or legal guardian. The mere reading of the above section of the Regulation shows that there are no restrictions upon the pursuance of this course by any cadet affected, and the law of the Board requires the President to submit all such protests or requests to the Board, or proper committees thereof.

Upon the conclusion of this statement the two classes without disorder, and apparently following a preconcerted plan, and in clear violation of the Regulation against desertion (Sec. 325 Regulations) disbanded, and later quit college and left for their homes, except about ninety, who were granted leaves of absence under a policy agreed upon by the authorities to grant such leave to any cadet who claimed he was having to leave under compulsion.

These are the facts leading up to and including the departure of the Freshman and Sophomore Classes from the college, and it must be emphasized that they show clearly that the events of Wednesday were not due to the issuance of the emergency order of Sunday, which had been revoked on Monday noon.

5. Following the departure of the Freshman and Sophomore Classes, the Junior and Senior Classes held meetings, and through their Committees also conferred with the President of the college. Later these classes submitted in the regular way to the President of the college for his transmittal to the Board of Trustees, as required by Sec. 61 of the college By-laws, what purported to be a petition covering their "Grievances". Among other demands made upon the Board is the following:

1. "Reinstatement of Freshman, Sophomore, Two Year Textile and One Year Agricultural Classes, along with Cadet Crosland of the Freshman Class,—all without punishment."

This as a petition and not as a demand would have been a proper exercise of their rights, but the real character of the document is disclosed by the distinct ultimatum to the Board as follows:

"We, the undersigned, hereby petition the Board of Trustees that the above named requests be granted immediately; also that if the requests are not granted we will not return to Clemson College at the expiration of the present leave of absence."

A leave of absence until March 21st having been granted the Junior and Senior Classmen by the authorities, the Board found upon reaching Clemson that three cadets representing the Junior and Senior Classes, had been duly requested by their classmates to remain at the college to present their demands to the Board of Trustees. These representatives of the classs appeared before the Board of Trustees Saturday afternoon.

When their attention was called to the fact that the language last quoted had been stricken from the original document signed by the members of the two classes before leaving for home, they stated that they had eliminated it since the departure of the classes, and when pressed for their authority for so doing, the Board was not convinced that such explicit authority existed in them, and that they were uncertain as to what their individual positions would be with reference to the findings of the Board, and could give no assurance whatever as to the position of their classmates. So that the Board must feel that the only document before it actually from the members of these two classes is in the form of an absolute ultimatum, which the Board refuses to consider.

While it is true that the military features of Clemson College require only three hours of military drill per week, made necessary to meet the requirements of the Federal statutes and the curriculum of the college, yet in all disciplinary essentials it is a military institution, governed and regulated under military discipline, in which obedience to constituted authority is always the most important element. All of this was known not only to the entire cadet corps

upon entrance into the college, but as well to their parents and guardians, just as it was known that Clemson College was founded and has been nurtured as an institution where the dignity of labor is duly appreciated.

The Board desires in this connection to emphasize that it neither appreciates nor approves the feeling apparent in the corps of cadets that depreciates or considers disgraceful what is called "menial labor". We realize that a boy does not come here primarily to do such labor, but it must be remembered that the prime object of this institution is to train the youth of the State for service and in the accomplishment of this end, we would in no way be understood to disregard or minimize the importance of a recognition and approval of and a participation in, whenever necessary, or in an emergency, any kind of honest labor in giving that training. The proper attitude of men towards work, and towards those who perform it, is an essential factor in their success or failure, and the policy of this institution has always been, and will continue to be, one where the highest regard for labor, (menial as well as intellectual), and for those who perform one as well as the other, is considered essential in the make-up of a man.

The Board of Trustees, with the maturest deliberation, and the fullest understanding of, and sympathy for, the weaknesses of young men acting under the stress of excitement and impulse, have reached the unanimous conclusion that the action of the Freshman and Sophomore Classes, followed by the ultimatum of the Junior and Senior Classes, is not justified by any condition existing at Clemson College.

The situation with respect to the messhall is not all that the Board could desire, but we find that this condition is not due to mismanagement, lack of interest, or lack of intelligent supervision, but is the result of prevailing conditions throughout the country, involving inadequate transportation, a shortage of skilled labor, (in fact a dearth of any kind of hired labor in this instance), and an inadequacy of funds due to the constantly increasing rise in the cost of food stuffs and labor. Such a condition as this, however, does not justify in the judgment of the Board, the spirit of extreme disobedience and impatience displayed by the Cadet Corps.

The Board recognizes the necessity for a satisfactory mess, and has authorized the President, and has provided him with funds, to bring this about, without the necessity of raising the monthly rate of board to the cadets; because to do this at a time near the end of a session might have the appearance of disregarding an agreement with the parents when their sons entered the college.

The Board's investigation into the method of trial of cadets by the Discipline Committee does not disclose a miscarriage of justice, but on the contrary shows that the cadet trials have been conducted in a spirit of fairness and sympathy, and that the conclusions, together with the punishments, have been reached and adjudged upon the same basis. That such has been the case is evidenced by the fact that since the beginning of this session in September, out of a cadet corps numbering more than 800 men, there have been only seven dismissals and six suspensions. The Board believes the trial system to be fair, and to have been administered fairly. But in view of the unanimous recommendation of the Discipline Committee itself, and the President of the college, and to allay the natural suspicion attaching to closed trials, and to give greater confidence in the findings of the Discipline Committee, the Board has deemed it in the interest of the college to take appropriate action that hereafter trials shall be open to the public, and that the accused shall be given the privilege of selecting counsel from the Faculty.

While strict discipline is necessary to control adequately so large a body of young men, the persistent rumors that are afloat in the State, to the effect that the discipline is harsh and unjust, and that efforts are being made to emphasize more and more the military features of this institution, are disproved by the following facts. During the term which is coming to an end, up to February 28, 210 cadets, or more than 25% of the corps, have received no demerits; 518 cadets, or 71% of the corps, have received less than 20 demerits, which entitles them to a place on the honor roll for the term, so far as discipline is concerned. Only two cadets during the entire current collegiate year have received the limit of demerits for which dismissal or suspension are the penalties.

Notwithstanding these facts, however, the Board feels that it is wise fully to review the existing Cadet Regulations heretofore promulgated by the Board, which have not been materially changed for many years, and to that end a sub-committee of the Board has been appointed, including several alumni who have lived in the barracks, with direction to report back to the Board at its regular spring meeting, April 7th.

The Board has found the Commandant and President Riggs, those immediately responsible for discipline, to have been diligent and fair in their enforcement of the existing Regulations. The Board is in full harmony with their administration of the affairs of the college, and gives assurance to them of fullest support.

The action of the cadets in view of the conditions found to exist is inexcusable. Explanations of it must be left to speculation; and while speculation is always dangerous, it is the belief of the Board

that it has grown either out of the spirit of unrest prevailing throughout the world and is another symptom of the world-wide protest both against the established order of things and of all regularly constituted authority; or is the result of dangerous and unwise advice and leadership, which has magnified small things into aggravated grievances; and it is the belief of the Board, and certainly it must be its hope, that the real cause is to be found in the latter rather than in the former alternative.

This Board can no more excuse the acceptance of foolish and unwise leadership than it can look with complacency upon a spirit of sullen disregard for the constituted authorities of this institution. The very life of Clemson College is dependent upon the obedience of its cadet corps to its rules and regulations governing their conduct. A breakdown in discipline in this institution would be as fatal to it as the break of a rail to a passenger train, and this Board, acting for the preservation of the future of this institution, cannot under such circumstances admit of the justice of the conduct of members of the cadet corps in their precipitous action of last Wednesday, nor will they regard any such member of the corps as being in position to discuss his case until such cadet has purged himself to the satisfaction of this Board of his apparent intention to deliberately and wilfully disobey, violate and contemptuously disregard its rules and regulations.

The Board fully recognizes its responsibility in the premise, both to the institution and to these young men, who spurred on by unwise counsel, have jeopardized their opportunity for an education. The Board likewise has the deepest feeling of sympathy for the parents, guardians and friends of these young men, and is unwilling by any appearance of obstinacy, to deny to these cadets who will put themselves in proper attitude, an opportunity to convince the Board or its delegated agents, of their willingness to subscribe freely and without compulsion to the pledges of loyalty and obedience to the laws and constituted authorities of this institution, and to accept all such other conditions as are herein prescribed.

To that end, as a condition precedent, the Board will require of each individual of the Senior and Junior Classes who signed the petition, or more properly, ultimatum heretofore referred to, to sign and file with the President of the College for the Board of Trustees by 11:30 P. M., March 21st, unless excused by the President, a written withdrawal of their approval of the last paragraph of the document signed by them and filed with the Board of Trustees. Such members of these classes as have failed or refused to file with the President of the College for the Board the statement herein required, in the time required, unless in the opinion of the President unavoidably detained, shall be deemed to be in a state of insubordination, and shall be dropped from the rolls of the college with-

out the privilege of reinstatement at any time in the future; and such of these classes who do not return in accordance with the terms of their present leave without sufficient excuse in opinion of the President of the college, shall be adjudged deserters, and dropped from the rolls of the college as such.

Such members of the Freshman and Sophomore Classes who do not return by 11:30 P. M., March 21, 1920, shall be adjudged to have violated Paragraph 325, Cadet Regulations, and their names shall be dropped from the rolls of the college.

When these conditions are met, those students falling within the classes herein described will be required to subscribe anew to the pledge given by them upon their former entrance into the college to obey and abide by its rules and regulations and to make up all work missed.

If these conditions of re-entrance into the college appear to the public or to the student body as unduly harsh, the Board would have each to understand that this institution in the future as in the past, must be run, and will be run by its legally constituted authorities, and with the full appreciation of the significance of the statement, that this Board would prefer to close the doors of this institution forever than it should be conducted other than by its constituted authorities.

The case of the Freshman and Sophomore Classes presents difficulties not met in the consideration of the case of the upper classes. The Board is convinced that these classes acted without that due consideration of the effect of their course as would be expected of more mature persons, and largely under influence arising outside of their own membership. It is felt that they allowed themselves unconsciously to be used by others for the attainment of purposes which they themselves did not fully understand, or whose consequence they did not fully appreciate.

This feeling induces the Board to conclude that members of the Freshman and Sophomore Classes will be received into the college, who return by eleven-thirty o'clock P. M., March 21, 1920, unless in the opinion of the President, unavoidably detained, and who shall with the written approval of their parents or guardians, subscribe to an affirmation distinctly and positively renouncing any deliberate intent to defy the college authorities, or to rebel against its rules and regulations by his conduct of March 10, 1920, or who shall affirm that his actions of that date were under compulsion or coercion of his fellow classmates or others.

None of these requirements herein contained apply to cadets of the Freshman and Sophomore Classes on leave of absence, who present upon their return the passes or permits under the authority of which they are now absent.

(Signed) ALAN JOHNSTONE,
President, Board of Trustees.

FINDINGS OF BOARD OF TRUSTEES IN INVESTIGATION

Requested by President Riggs and Commandant Cummins

April 8th-9th, 1920.

The board of Trustees of Clemson College met in regular session on Wednesday, April 7, 1920, at 3:00 P. M. The requests for full investigation of their official conduct filed with the Board by President W. M. Riggs and Commandant J. M. Cummins, were considered. The Board decided that justice to all concerned necessitated the investigation sought by them, and during the afternoon of the 7th, gave notice that a public hearing would begin at 3:00 P. M. April 8th, in the chapel of the college.

This notice invited the filing with the Board of any specific charges or complaints against these officials or respecting the conduct of the affairs of the college, and in pursuance thereto the Board had filed with it the following charges and complaints:

That:

1st. Conditions in the messhall and food provided were uncleanly, unwholesome, and protest to the authorities made and repeated during the scholastic year brought no relief prior to the trouble in March. (Specifications omitted.)

2nd. The student body lacks confidence in or reliance upon the statement of the President.

(a) Dr. Riggs told the Senior Cooperative Committee that he knew of the detailing of men for work in messhall. He heard the Commandant and Cadet Hoffmeyer discussing scarcity of labor, etc., and that they discussed the order detailing men.

(b) To the Freshman Cooperative Committee. Dr. Riggs told the Committee that he did not know of the order detailing men for work in messhall.

(c) The Senior Cooperative Committee went in to see Dr. Riggs relative to conditions in messhall and their remedy. He promised to look into the matter at once, and no results prior to about ten days before the trouble in March.

(d) On one occasion Dr. Riggs visited the messhall at the invitation of the Senior Cooperative Committee for supper. On this occasion the meal served was the best within the knowledge of any cadet present. This may be merely a coincidence; that such was the case was a very peculiar one.

3rd. We believe discipline has been unnecessarily harsh and unjustly administered on several occasions. (Specifications omitted.)

4th. Hospital facilities are very unsatisfactory and inadequate.

5th. Facilities for fire protection and fire escapes are unsafe and inadequate.

The above charges were signed by members of the four class committees.

The public hearings were conducted in the Chapel in the presence of the cadet corps, a committee of parents, members of the Faculty, and other persons; beginning at 3:00 P. M., April 8th, and continuing until after midnight on April 9th. Every opportunity was afforded to any person desirous of offering charges and complaints or evidence in support thereof. A number of persons appeared who were examined under oath relative to the matters under investigation.

The Board finds with respect to the complaints concerning the messhall that practically all of them related to conditions existing prior to March 7th, 1920, and some of them during the session ending in June of last year, and this phase of the situation, it is thought, is adequately covered in the report of this Board of March 15th. The evidence was ample that President Riggs had made repeated efforts to improve these conditions. The conditions with respect to the quantity, quality and preparation of the food served, and the sanitary conditions surrounding the messhall generally, are now reasonably satisfactory. This improvement, so gratifying to all concerned, is the result largely of the greater expenditure for messhall purposes, authorized by the Board at its last meeting. The increase in expenditure for this purpose amounts to about \$6.00 per month extra for each student.

The Board, realizing the importance of it, went most thoroughly into the charge that President Riggs had made certain contradictory statements to representatives of the several classes.

The main allegation upon which this charge of a lack of confidence in or reliance upon the statement of President Riggs, was predicated upon the allegation that President Riggs had told the Senior Cooperative Committee that "he knew of the detailing of the men for work in messhall. He heard the Commandant and Cade Hoffmeyer discussing scarcity of labor, etc., and that they discussed the order detailing men," and he told the Freshman Cooperative Committee that "he did not know of the order detailing men for work in messhall."

Upon this point members of the Senior, Sophomore and Freshman Committees appeared before the Board of Trustees and presented in full their recollection of what was said at the interview between them and President Riggs on the Monday of the disturbance. The statement of Dr. Riggs to the effect that the order detailing men in the messhall was issued with his knowledge was made first to the Senior Committee early on Monday morning. The same day, about noon, he made the same statement in the presence of the Commandant to about forty men with whom they conferred with reference to employment in the messhall. On Tuesday night

he made the same statement to the Discipline Committee. On Wednesday night, he, with the approval of the Discipline Committee, incorporated the same statement in the paper given to the public press. On Thursday he made the same statement in the letter sent to every patron of the college. In addition, a former member of the Sophomore Committee not now in college in his testimony differed from the other two members of that Committee. As he recalled it, the statement made by Dr. Riggs to his committee was the same as that made to the Senior Committee and the other bodies above set out.

All of these facts were clearly brought out in the evidence and absolutely no motive for making contradictory statements was shown. Members of the Faculty with long service in connection with the college testified to their relationship, official and personal, with Dr. Riggs, and testified emphatically to his veracity, integrity and high character.

President Riggs in a comprehensive, fair and courageous statement, reviewed his relationship with the corps of cadets and the circumstances surrounding the interviews out of which grew the misunderstanding of his statement.

This misunderstanding between Dr. Riggs and the representatives of the Freshman and Sophomore classes is not to be wondered at when the tenseness of feeling surrounding the interviews of March 8th is remembered. It is not the first time that men have misunderstood each other, nor will it be the last. The Board believes and adopts the theory of President Riggs himself made at the hearing, and found in his testimony as follows:

"My own theory is that these young men, whether through my mistake of their questions, or their mistake of my answers, got mixed in the matter of my **approval** of this order, or my **seeing** this order, with my **not knowing** of this order. That is the only theory upon which I can explain it.

* * * * *

"The reputation of this student body is as dear to me as it can be to any living soul. I would not wish at this time to have you think that the young men of this corps would attempt, directly or indirectly, deliberately to deceive you. I ask you to accept their statements of the conference with the same sincerity that you accept my recollections to the contrary."

It was apparent to the Board that this statement of the President's attitude, a part of which is above quoted, produced not only on the Board, but upon others, a profound impression, and that from it and other testimony adduced at the hearing, a better understanding immediately arose.

Specification (c) is disposed of heretofore in the discussion on messhall conditions.

In regard to specification (d), containin the suspicion that the President attended a supper especially prepared for his coming, the evidence showed conclusively that the invitation to attend this supper was issued by the Senior Cooperative Committee itself within fifteen minutes of the time the supper was to be served. The testimony of all officers connected with the messhall entirely refuted any idea that any special preparations had been made in the expectation of visitors. Absolutely no evidence was introduced to sustain or justify the corps' suspicion that the supper was especially planned for the visit of the President, except that it was a better supper than usual.

The Board expresses its very fullest confidence in the veracity, integrity and loyalty of President Riggs, both to the college and its students, and deems it unnecessary to express an opinion touching his extraordinary efficiency, so well known to the people of the State.

While it seems from the testimony adduced at this hearing that the suspicions regarding the President's actions were a contributing factor in the recent going out of the Sophomore and Freshman classes, that fact was known neither by the Board nor the President, nor brought to their attention when it held its meetings on March 13th at the call of President Riggs. At that meeting the Board considered every charge or grievance which students, parents, or others brought forward. No charge or lack of confidence in the authorities was included.

The testimony offered to support the charge that discipline had been administered harshly or unjustly does not sustain it. The character, veracity, and efficiency of the Commandant, Colonel Cummins was not even brought into question. The Board allowed any cadet to offer complaints or testimony against Colonel Cummins or his assistants. Five cadets out of the corps of nearly eight hundred, offered complaints, and their testimony, but it is the belief of the Board that every one who heard their evidence was convinced, as the Board was, that these complaints were not sustained.

As to the hospital facilities being inadequate and unsatisfactory, the Board desires to state that in 1915 an appropriation of \$25,000 was voted by the Board to erect a modern and thoroughly adequate hospital. On account of the war and the reduction in the funds of the institution amounting to fifty percent. of the fertilizer tag tax, the rising cost of material and labor, and the necessity for economy, it has been impossible to begin the work of building the hospital, although hthe bricks were bought and have been on the ground since that time.

With regard to the complaint that more fire escapes are needed on the barracks, the Board, from its investigation of this matter, feels no apprehension whatever from the menace of fire to the cadet corps, because the means of escape, including stairways and fire escape equipment, are entirely adequate.

Last and finally, the Board hopes that its investigation will result in a better understanding on the part of the student body, the parents and the authorities of the college, in their relationship one with the other. Also, the future of this institution, and its usefulness to the young manhood of the State depend upon the maintenance of discipline in the cadet corps, and to this end we would ask the sympathetic support of its patrons and friends.

Respectfully,

(Signed) ALAN JOHNSTONE,

Chairman Board of Trustees.

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THIRTY-SECOND ANNUAL REPORT

OF THE

BOARD OF TRUSTEES

OF THE

**CLEMSON
AGRICULTURAL
COLLEGE**

TO THE

General Assembly of South Carolina

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1921

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LETTER OF TRANSMITTAL

*To The General Assembly of South Carolina,
Columbia, S. C.*

Gentlemen:

In obedience to the laws of the State, the Board of Trustees of The Clemson Agricultural College of South Carolina presents herewith the annual report covering the operation of the College for the fiscal year July 1, 1920 to June 30, 1921.

The report is voluminous because it is our desire to give to the Legislature the fullest information with regard to the work, the plans and the finances of the State's agricultural and mechanical college. The attention of the General Assembly is especially directed to the last chapter of the President's report, which deals with the financial condition in which the College finds itself. We present this condition to you with full confidence alike in your wisdom and in your patriotism. For thirty-one years the college has been able to live on the bargain entered into originally, whereby the College was to derive its support chiefly from the Fertilizer Tax. When obedience to this ancient compact imperils the very life of the College, the Board has no alternative but to ask you to share in its concern and provide a suitable remedy.

The report made by the experts employed by the Legislative Committee on Economy and Consolidation is the last exhibit of this report, and to it I direct your attention. We are entirely willing to have our stewardship judged by this report of impartial experts.

Very respectfully submitted,

ALAN JOHNSTONE,
President Board Trustees.

REPORT OF THE PRESIDENT OF THE COLLEGE

Covering the Fiscal Year July 1, 1921--June 30, 1922

Clemson College, S. C.,

December, 10, 1921.

From W. M. Riggs, President of Clemson Agricultural College
To Hon. Alan Johnstone, President of the Board of Trustees
Of the Clemson Agricultural College.

Dear Sir:

I have the honor to submit herewith the President's annual report covering the twenty-eighth session of the Clemson Agricultural College. The report covers the fiscal year from July 1, 1920 to June 30, 1921, and is intended for your thirty-second annual report to the Legislature.

I have arranged the report in seven main divisions as follows:

1. A GENERAL STATEMENT.
2. A FISCAL STATEMENT.
3. THE COLLEGIATE WORK AND ORGANIZATION
4. THE PUBLIC SERVICE.
5. THE STUDENT LIFE AND INTERESTS.
6. APPROPRIATIONS FOR PUBLIC SERVICE 1922.
7. THE PRESENT SESSION, 1921-22.
8. THE FINANCIAL FUTURE OF THE COLLEGE.

PART I. A GENERAL STATEMENT

THE SESSION OF 1920-21:

In all but its financial aspects, this session stands out as one of the best, if not the best, during the ten years I have been in the president's office.

I have never seen better conduct or better spirit on the part of the corps of cadets than we have had this entire session. The same statement might be made with equal emphasis with regard to the Faculty. Everybody and everything seems to have worked in harmony for the best interest of the college.

The Enrollment reached 847, the third largest figure in the history of the college. This total included 102 vocational students not in college classes. A striking feature was the persistence of attendance, the losses during the session being only one-half of the past eleven-year average. The summer school attendance of 234 was also the largest in the history of the college.

The Class Work was very much above the average as shown by the following percentages of students, who at the end of the session were not promoted to the next higher class:

Freshmen, 5.5% ; Sophomores, 5% ; Juniors, 2.2%.

The 1921 Graduates numbered 124. In respect to loyalty, earnestness and other good qualities, it was one of the best Classes in the history of the college. Under its wise and good president, Cadet-Captain G. G. Gilmer, this class had a full share in all of the good things which were brought about during the session of 1920-21.

The 1921 Summer School reached an attendance of 301 students, this being also the largest in our history.

The Discipline Record of the corps was as good as was its class record. During the entire session, only two students were dismissed and three suspended.

For the session, the average number of men per term to receive no demerits was approximately 32.1% of the total corps, and the number who received 20 demerits or less, thereby earning eligibility for the honor roll, 64.2%. Eleven

only exceeded the term and sessional limits of demerits and were required to withdraw.

During the session the Discipline Committee handled only ten cases. Six were found guilty and four were acquitted. Of the six found guilty, two were dismissed, three were suspended, and one was given a local punishment. During the third term the Discipline Committee did not try a single case.

Under these excellent conditions, it is not surprising that the college had the honor of being one of the four colleges in the Fourth Corps Area rated by the War Department as "distinguished college." The other three were The Citadel, Georgia Tech., and Auburn.

The "Student Activity Fee," giving free participation to all students in athletics, the Y. M. C. A., and other student activities, has had the marked effect of democratizing this important side of college life, in stimulating college spirit, and adding to the zest and pleasure of college life.

The Health of the Student Body has been exceptionally good. For the first session in many years we have escaped any kind of epidemic, although there have been cases of mumps, measles, and influenza on the campus and in barracks. Although we have had three or four serious cases of illness, there have been no deaths among the students at college. I regret to report, however, that Cadet J. R. Inman, one of the brightest students of the Freshman Class, and one of the finest young men in college, went home sick at the end of the session and died at his home in Charleston on June 18th.

Among the material Additions to the college plant in the year covered by this report might be named the three hundred acres added to the Coast Experiment Station for beef cattle experiments on coastal plain grass lands; the final completion of the small calf and hog barns; completion of the fifty-foot addition to the east wing of the engineering building; the enlargement of the postoffice; the new tile floor in the mess-hall, and the new improved kitchen, rebuilt after its partial destruction by fire in January.

In the matter of Organization the creation of the new Department of Student Affairs, with Prof. D. H. Henry in charge filled well a long-felt want. We had the good fortune to select in Capt. J. D. Harcombe a splendid mess officer.

The Legislature at its session in February made Appropriations for Clemson's Public Service of \$226,147.15, this representing the full amount that was asked for tick eradication, agricultural research, live stock sanitary work, etc., None of this appropriation is available of course for any college purpose. The \$50,000 for agricultural research included in the above total literally saved the life of our Experiment Station, which was languishing on the small and inadequate federal appropriation of \$30,000 from the Hatch and Adams funds.

Among the Improvements not Visible to the eye were the inauguration of the new curriculums, whereby the college courses were greatly extended and enriched; greater co-operation on the part of the cadet officers in maintaining discipline; and a growing sentiment among student leaders that the inauguration of a thoroughgoing formal honor system is the most important thing that the student body can do for Clemson.

A record of the achievements of the past session would be incomplete without mention of the Home Coming last summer, and the Reorganization of the Alumni Association, the election of Mr. Folger as its Secretary, and the promise which this movement holds out for the good of athletics, increased attendance, and the promotion of all other college movements in which an Alumni Association can properly assist.

In closing this epitome of last session I regret to report so small an amount received from the fertilizer tax as \$167,505.16—the smallest income from this source in any year, but one (1914-15), during the past fifteen years. But for a reserve fund saved up to meet just such an emergency, and at the expense of many needed things, we would not have been able to complete the year without the use of borrowed money. As it was, the college went through 1920-21 on the basis of an irreducible minimum of expenditure, and had to give up many needed and hoped-for items of equipment and improvement. If our resources for operating Clemson as a College only this past session are compared on a basis of attendance with those of any A. & M. College in the land, or any state college for men in South Carolina, the serious strain through

which we have passed can be readily appreciated. Let us hope that the good work Clemson is doing may not be so hampered again by mere lack of money.

INVENTORY.

Our inventory as submitted to the Governor gives the following property values as of date June 30, 1921:

| No. | Classification | Est. Present Value |
|------------------------|--|--------------------|
| I.— | Office Equipment ----- | \$ 46,378.26 |
| II.— | Household Equipment ----- | 56,298.44 |
| III.— | Educational and Recreational Equipment ----- | 177,954.68 |
| IV.— | Library Equipment ----- | 44,807.80 |
| V.— | Vehicles ----- | 10,700.49 |
| VI.— | Live Stock ----- | 51,876.77 |
| VII.— | Medical and Surgical Equipment ----- | 1,424.84 |
| VIII.— | Military Equipment ----- | 2,952.97 |
| IX.— | General Plant ----- | 181,079.80 |
| X.— | Buildings ----- | 1,107,565.00 |
| XI.— | Real Estate ----- | 354,479.00 |
| Equipment Totals ----- | | \$2,029,081.63 |
| XII.— | Supplies ----- | 86,450.77 |
| Totals ----- | | \$2,115,532.40 |

BURNING OF KITCHEN AND COMMISSARY:

Upon the morning of January 18 fire destroyed the roof and the interior of the kitchen, dishwashing room, bakery, and commissary. The gallant work of the cadets and an ample supply of water at high pressure kept the fire from gaining access through the messhall to barracks number one. Had it not been stopped short of the messhall our entire group of main buildings might have been destroyed. The following insurance was paid us promptly by the Sinking Fund Commission to cover our losses:

| | |
|----------------------------------|-------------|
| Provisions and supplies ----- | \$3,173.54 |
| Equipment and utensils ----- | 8,015.04 |
| New roof ----- | 8,352.06 |
| Temporary roof and repairs ----- | 964.71 |
| Total ----- | \$15,505.35 |

With this insurance and \$1261.77 in addition from the college building fund, we have built a steel supported roof and repaired and improved the kitchen, and put in new equipment so that we now have one of the best plants in the entire South.

I wish to direct the Board's attention to the very fine treatment and satisfactory settlement accorded the College by Mr. J. H. Miller, Secretary of the Sinking Fund Commission.

INSPECTIONS AND VISITATIONS:

Board of Visitors:

Under Section 17 of the By-laws, the Board of Trustees elects each year a Board of Visitors composed of one prominent citizen of each congressional district. For the fiscal year covered by this report the following composed the Board of Visitors: 1st District, T. S. McMillen, Charleston; 2nd District, R. B. Cunningham, Allendale; 3rd District, J. B. Park, Greenwood; 4th District, B. E. Geer, Greenville; 5th District, John R. Hart, York; 6th District, John W. McKay, Rowland, N. C.; 7th District, J. H. Clifton, Sumter.

This Board visited the college on May 3 and 4. All of the members were present except Messrs. McMillen and Clifton. Mr. Hart was elected Chairman and Mr. Geer Secretary. The report of this Board of Visitors is attached to this report, and careful attention is invited to it. It is an unusually strong document. It sets out, from the standpoint of impartial observers, the needs of the college, and commends the efficiency and economy of the college management in terms strong and unequivocal. Particular attention is directed to the recommendations of the Board regarding the financial support of the college.

Especially gratifying also in these days when the military form of government is not particularly popular, is the following comment of this Board of Visitors in regard to that feature of the college routine:

“While the Board of Visitors realize that there will always be objections, some well founded, to the military system of student government; still our observations of the work of the institution leads us to believe

that any change in this respect would be inadvisable. We were impressed with the orderly procedure of the cadets and the general expedition and efficiency with which the work of the college was carried along."

Visitation of Legislators:

L

It has been difficult, if not impossible, to get the Legislature as a body to visit Clemson. The few times our invitation has been accepted we have had a large crowd of people,—larger than we could handle,—but very few legislators. However, it is necessary that the Legislature have first hand information in regard to the work, plant, and efficiency of the institution. Therefore, I have pursued the policy of inviting during the fall months small parties of legislators to come here and look carefully into our work. In small groups we can show the internal workings of the college much better than to several hundred. We probably have now in the Legislature as many as 75 men who have been at Clemson and can give first hand information to any question in the Legislature which arises regarding the college.

In November 1920 we had first the following members of the three counties immediately adjoining the college: Messrs. Hendricks, Dickson, Ballard, and Harris, of Anderson County; Moon of Greenville County; Leopard of Pickens County; Mason, Bruce, and Dalton of Oconee. In the second and third parties there were the following legislative members: Messrs. Barnwell, Sprott, Hydrick, Atkinson, Kennedy, Kilingsworth, Counts, Smith, Sherard, Lancaster, McInnis, and Keller. While disappointed that a number who were invited could not attend, we appreciate the interest shown by those who came. Every effort was made to give our visitors the greatest possible amount of information in the short two days they were able to remain with us.

Inspections by the War Department:

The War Department made its usual inspections to determine the efficiency of the military instruction of the R. O. T. C. These inspections resulted in the college being given one of the four distinguished places in the Fourth Corps Area.

ORGANIZATION OF THE ALUMNI ASSOCIATION:

The Home Coming held on July 31 and August 1 was attended by 382 old students, and culminated in the reorganization of the Alumni Association, which up to this time had been as dead as the proverbial Hector. Mr. T. W. Cothran, Class 1896, was elected President, and the following compose the Board of Governors: Messrs. T. W. Thornhill, 1914, Charleston; T. B. Young, 1913, Florence; R. M. Simpson, 1910, Columbia; H. S. Johnson, 1910, Aiken; George Speer, 1908, Anderson. No better Board could possibly have been chosen from the alumni. This Board of Governors selected Mr. D. F. Folger, of the Class of 1916, as Secretary, and under his efficient administration substantial work has already been made in organizing the Alumni and making it a vital factor in the growth and development of the college.

LEGISLATION:

Public Service:

The legislature, as usual, was friendly to the college and every request made was granted in full.

Our estimate for Public Service was passed without reduction. The following amounts were asked for and received:

| | |
|---|--------------|
| 1. For Extension Service ----- | \$ 94,147.15 |
| 2. For Agricultural Research ----- | 50,000.00 |
| 3. For Tick Eradication ----- | 20,000.00 |
| 4. For Live Stock Sanitary Work ----- | 50,000.00 |
| 5. Crop Pests and Diseases ----- | 10,000.00 |
| 6. For Slaughter of Diseased Live Stock | 2,000.00 |
| <hr/> | |
| Total ----- | \$226,147.15 |

But for these legislative appropriations it would have been impossible to have continued these lines of public service because of the reduced income from the fertilizer tax.

Loan:

A bill was passed authorizing a loan not to exceed \$150,000.000 from the State during this calendar year, if so much was necessary. The terms of repayment require that we turn

over all the fertilizer tax over \$250,000.00, but in no year, regardless of the tax, shall the payment be less than one-tenth of the amount borrowed, with interest.

BOARD OF TRUSTEES:

The vacancy in the life membership, caused by the death of Senator B. R. Tillman, remains as yet unfilled.

The Board held its three regular annual meetings in December, April, and July, and one extra meeting in September to consider the award of scholarships.

PART II. A FISCAL STATEMENT

The Treasurer's annual report, which is attached hereto, gives the fullest information in regard to the expenditure of all college funds. The following is a summary of receipt and disbursements for college purposes and those activities required by law to be paid from the Fertilizer Tax receipts:

RESOURCES:

| | |
|--|--------------|
| 1. Interest on Clemson Bequest ----- | \$ 3,512.36 |
| 2. Interest on Landscript ----- | 5,754.00 |
| 3. Morrill & Nelson Fund (U. S.) ----- | 25,000.00 |
| 4. Tuition from Cadets ----- | 13,486.40 |
| 5. Sales, Interests, Rents, etc. ----- | 46,232.54 |
| 6. Privilege Fertilizer Tax ----- | 167,505.16 |
| 7. From Reserve Fund ----- | 77,203.68 |
| <hr/> | |
| Total ----- | \$338,694.14 |

Expenditures

COLLEGE OPERATING EXPENSES:

| | |
|---|------------------------|
| 1. Salaries, Supplies, Labor, Coal, etc. ----- | \$253,910.34 |
| 2. Equipment for teaching ----- | 7,886.46 |
| 3. Improvements and additions. --- | 26,244.82 \$288,041.62 |

PUBLIC SERVICE PAYABLE FROM FERTILIZER TAX.

| | | |
|---------------------------------------|-------------|--------------|
| 1. Fertilizer Inspection and Analysis | \$29,952.41 | |
| 2. Scholarship and Advertisements | 12,749.10 | |
| 3. S. C. Experiment Station | 5,467.55 | |
| 4. Miscellaneous Public Service | 2,483.36 | 50,652.52 |
| Total | | \$338,694.14 |

PUBLIC SERVICE:

As shown later under appropriate headings, the college administers a great deal of money for regulatory, research, and extension service, amounting to a total of \$682,540.60. However, all of this money is appropriated under federal and state acts, which restrict its use. None of it is available for any collegiate purpose. Of the above total \$435,352.09, passes thru the Treasurer's hands. The remainder is paid out direct by the Treasurer of the United States or by county treasurers, chambers of commerce, etc.

CADET FUNDS:

Likewise the money received from cadets for their board, laundry, uniforms, and other living expenses is held in trust by the college and administered solely for the benefit of the students. Only tuition and laboratory fees become a part of the college income.

The total of the expenditures under the Cadet Fund was \$239,798.18. The receipts were \$246,443.00. Balance carried forward to next session \$6,644.82.

REVOLVING ACCOUNTS:

Also, the college has a large number of open accounts not supported by state, college or other appropriations. These are simply revolving accounts, representing no income to the college. Some accounts under this head are merely transfer accounts. Receipts from sales of produce, etc., under these accounts was \$352,876.13, and expenditures \$371,130.49. The book deficit indicated by the above figures is partly or wholly offset by increased inventory values in the shape of live stock, food stuffs on hand, etc.

RESERVE:

During the first six months of the fiscal year, July 1st to December 31st, the college receives very little revenue from the Fertilizer Tax—sometimes, as is the case this year, not enough to pay the cost of inspection or analysis. It is therefore necessary to reserve sufficient funds from the previous year to carry the college over this “dry” period. The College entered on this fiscal year July 1st, 1920 with a reserve of \$154,413.03. This in no sense represents a balance, but merely a protective fund held back in spite of many needs which might easily have absorbed it. During the year \$77,203.68 was absorbed, leaving a balance July 1, 1921 of \$77,209.35.

SUMMARY:

The following condensed statement shows the entire funds administered during the fiscal year 1920-21 and gives an index to the magnitude and many-sidedness of the Clemson College activities.

*Summary of Funds Administered**Fiscal Year 1920-21**Expenditures*

| | |
|--|------------------|
| 1. For Collegiate Purposes ----- | \$ 288,041.62 |
| 2. For Agricultural Public Service ----- | 682,540.60* |
| 3. Revolving College Accounts ----- | 335,209.60 |
| 4. Cadet Funds (For Board, Uniforms, etc.)-- | 241,957.16 |
| 5. Cadet Deposits (Personal Accounts ----- | 87,764.19 |
| <hr/> | |
| Total ----- | \$1,633,513.17** |

* Under Item 2, \$90,809.02 is paid out by the Treasurer of the United States, and \$151,256.93 by County Treasurer and commercial bodies. But in all cases the vouchers are approved by college officers.

** Of this total expenditures, \$1,391,447.22 is disbursed by the College Treasurer. Total receipts by College Treasurer were \$1,513,349.74.

AUDIT:

The books and accounts of the Treasurer's office are audited annually by the State Bank Examiner's office. His audit is

appended to this report. His testimony to the accuracy and excellence of the Treasurer's work is that of every auditor who has had an opportunity to inspect this well kept office.

RECEIPTS FROM TUITION:

The following is a statement of the receipts from tuition for the past ten years.

Tuition Receipts.

| Five years prior to investigations by State Board of Public Welfare | Five years subsequent to creation of State Board of Public Welfare |
|---|--|
| 1911-12-----\$5,340.00 | 1916-17-----\$14,243.55 |
| 1912-13-----5,050.00 | 1917-18-----14,590.00 |
| 1913-14-----4,850.00 | 1918-19-----13,575.73 |
| 1914-15-----5,233.00 | 1919-20-----17,472.83 |
| 1915-16-----4,670.00 | 1920-21-----13,486.40 |

An act passed by the 1920 General Assembly exempting from tuition all students who had served in the World War, considerably reduced the tuition receipts for 1920-21.

PART III. COLLEGIATE WORK AND ORGANIZATION

SUPPORT

As stated in a previous chapter, the college work is supported almost entirely from the balance which remains of the fertilizer tax after the cost of the inspection and analysis has been paid. For the fiscal year 1920-21, the total expenditures for what might be termed "collegiate work" were as follows:

| | |
|---|--------------|
| For salaries, labor, insurance, coal, shop and laboratory, materials, etc. ----- | \$253,910.34 |
| For teaching equipment and minor improve- ments and additions to plant ----- | 34,131.28 |
| Total Operating Expense ----- | \$288,041.62 |

This total is a very low operating cost of a technical college of this size.

ENROLLMENT:

The total enrollment for 1920-21 was 1081, distributed as follows:

(a) *In College Courses:*

| | | |
|------------------|-----|-----|
| Seniors ----- | 126 | |
| Juniors ----- | 156 | |
| Sophomores ----- | 180 | |
| Freshmen ----- | 244 | 706 |

(b) *In Special Classes:*

| | | |
|---|-----|-----|
| One Year Agricultural ----- | 16 | |
| Specials and Irregulars ----- | 21 | |
| Federal Board students not in college classes | 104 | 141 |

| | | |
|-----------------------|-----|--|
| Regular Session ----- | 847 | |
|-----------------------|-----|--|

| | | |
|---|-----|--|
| (c) <i>Summer School Students</i> ----- | 234 | |
|---|-----|--|

| | | |
|-------------|------|--|
| TOTAL ----- | 1081 | |
|-------------|------|--|

The 847 students enrolled during the regular session of the college were distributed by courses as follows:

| | | |
|-----------------------------------|-----|-----|
| In Agriculture ----- | 386 | |
| In Engineering ----- | 330 | |
| In Textile Industry ----- | 98 | |
| In Chemistry and Chem. Eng. ----- | 22 | |
| In Architecture ----- | 11 | 847 |

OCCUPATION OF PARENTS:

| | | |
|--------------------------------------|-------|--|
| Farmers ----- | 45.5% | |
| Merchants ----- | 14.5% | |
| Clerks ----- | 3.6% | |
| Lawyers, doctors and preachers ----- | 3.5% | |
| Mechanics, etc. ----- | 6.1% | |
| Unclassified ----- | 26.8% | |

GRADUATES:

On Commencement day, June 7th, diplomas were awarded to the next largest graduating class in the history of the college. The Senior Class numbered 126 men. Of this number 123 have received the degree of B. S., and one more will receive his degree after making up a small amount of work on which he is behind:

GRADUATES

| | |
|----------------------------|-----|
| In Agriculture ----- | 56 |
| In Mech. Engineering ----- | 18 |
| In Elec. Engineering ----- | 21 |
| In Textile Industry ----- | 11 |
| In Chemistry ----- | 6 |
| In Civil Engineering ----- | 9 |
| In Architecture ----- | 2 |
| Total ----- | 123 |

ONE YEAR AGRICULTURAL COURSE:

On May 20th, certificates were awarded to 13 men who satisfactorily completed the one-year course in Agriculture. It is a great disappointment to us that more young farmers in South Carolina do not avail themselves of this excellent practical course in agriculture.

CERTIFICATES OF MERIT:

Certificate for distinguished agricultural service were awarded to Mr. R. M. Cooper, of Wisacky, and Mr. Jas. L. McInstosh, of Dovesville, for their excellent work with Guernsey cattle.

SUMMER SCHOOL:

The sixth summer school extended from June 14th to July 24th. The enrollment reached a total of 234 students, distributed as follows:

| | |
|--------------------------------|-----|
| Agricultural Teachers ----- | 46 |
| Corn Club Boys ----- | 79 |
| Cotton Graders ----- | 14 |
| Horticulture ----- | 1 |
| Federal Board Students ----- | 43 |
| College Make-up Students ----- | 42 |
| Preparatory Students ----- | 9 |
| Total ----- | 234 |

SCHOLARSHIPS.

There were in effect 80 regular four-year county scholarships and 14 from the State-at-large, of which 63 were taking agriculture and 17 textile engineering. Only 10 of the One-

Year Agricultural Scholarships were filled. Of the above scholarships, 63% were held by farmers' sons.

Scholarships are not now as eagerly sought as heretofore. The careful examination by the State Board of Public Welfare into the ability of parents whose sons are seeking scholarships deters those who are not deserving from applying. Also the value of the scholarship (\$100.00 and free tuition) represents a much smaller part of the total cost of college education than formerly. In the last ten years the cost of board, uniforms, books, and other necessities has almost, if not quite doubled.

Clemson College has not followed the practice of other colleges of filling scholarship vacancies with students who have not stood the prescribed examinations and made the required grade of 60% on such examinations. In other words, Clemson follows strictly the requirements of the law, but goes no further than these requirements. Neither the necessity of stimulating attendance or an abundance of funds would make more than strict compliance necessary or desirable.

TRAINING OF DISABLED SOLDIERS:

In previous reports I have described rather fully the difficulties incident to the training of disabled soldiers sent here by the Federal Board for Vocational Education.

During the past session the enrollment of these soldiers totalled 114. Ten of these were in college classes, 2 in the One-Year Agricultural course, and the remainder in special vocational courses.

Approximately 50% were married and lived in the vicinity of the college. Many of them were not comfortably quartered, but there was no way in which the college could render assistance because all college houses were occupied and there was a long waiting list yet to be provided for. During the past session, because of the small size of the freshman class, we were able to give up the first floor of barracks Number One to house the single men who could not get accommodations elsewhere. With an overflowing attendance this session (1921-22) the housing of these disabled soldiers in barracks necessitates undue crowding. The only relief I see is to build another

dormitory which will provide for their needs, and also for the overplus of regular students.

The United States Government pays us approximately \$24.15 per month for each student who is given instruction outside of the regular college courses, and pays the regular fees for all. It is necessary to employ special additional instructions for teaching much of the Federal Board work, which ranges all the way from reading and writing to regular college instruction

RESERVE OFFICERS' TRAINING CORPS:

The Reserve Officers' Training Corps (R. O. T. C.) offers not only an opportunity for service to the nation, but affords substantial help to the student body as a whole, and in particular to those juniors and seniors who elect to take the Advanced Course. Under the Morrill Act,—establishing Land Grant Colleges,—and the ruling of the War Department these colleges are required to give a minimum of three hours per week of military instruction for at least two years. As an adjunct to discipline, we have always required three hours military instruction per week during the entire four year course. Those students who enter the Advanced Course of the R. O. T. C. take the total five hours of military work during the junior and senior years, and in return get an allowance for subsistence which amounted last session to fifty-three cents per day. R. O. T. C. students of all classes received an allowance of \$36.00 as commutation for uniforms. In all the Government paid on student uniforms during the fiscal year 1920-21 \$20,968.00, and for subsistence \$33,888.71, a total of \$54,856.71.

THE FACULTY:

The work of the faculty during the year covered by this report has been very satisfactory. The spirit of co-operation and harmony so noticeable in the student body has been clearly evident among the teachers and officers of the college as well.

Our salary scale is yet probably lower than that of any other male college in the State, except the negro college in Orangeburg, and much lower than many of the

Land Grant Colleges. However, it is better than it has been in the past, and as a result there have been comparatively few resignations. There can be no thought of reducing salaries at this institution without the danger of disruption, because the trend of salaries at other institutions is still upward, and we are not yet up to the average level. This is shown by the following comparison, the average given below being compiled by the Bureau of Education in December, 1920 from 52 state universities and colleges:

| | Deans or | | | Assoc.- | | Asst. | |
|--------------------------|----------|-----------|--------|-----------|--------|----------|--|
| | Pres. | Directors | Profs. | Profs. | Profs. | Instr's. | |
| Average of 52 Colleges | \$8324 | \$4427 | \$3372 | Not given | \$2241 | \$1659 | |
| Clemson College Averages | 6000 | 3291 | 2786 | \$2307 | 2038 | 1530 | |

In every case it will be noted that Clemson is below the average.

The housing situation is again becoming acute because of our increased force and the suspension of outside buildings. We need especially apartments suitable for young couples who are not prepared for housekeeping.

REVIEW OF DEPARTMENTS:

Organizations

The unit of organization at Clemson College is the subject-matter division—such as Mathematics; Architecture, Botany, Biology, Electrical Engineering, etc. These divisions are grouped into seven departments as follow:

Agricultural; Academic; Chemistry; Engineering; Military; Textile; and Student Affairs.

Several divisions, such as the Library, Treasurer's office, Construction and Repairs, etc., are not grouped into departments, but are directly under the President.

The following directors presided over the above departments:

1. Agricultural Department—

- (a) Resident Teaching ----- Dr. F. H. H. Calhoun
- (b) Agricultural Research ----- Prof. H. W. Barre
- (c) Extension Service ----- Dr. W. W. Long

2. Academic Department ----- Dr. D. W. Daniel

3. Chemistry Department ----- Dr. R. N. Brackett.

4. Engineering Department ----- Prof. S. B. Earle
5. Military Department ----- Maj. J. M. Cummins
6. Textile Department ----- Prof. C. S. Doggett
7. Student Affaris. ----- Prof. D. H. Henry

These officers, with the addition of the Treasurer, S. W. Evans, and the Secretary of the Fertilizer Board of Control, Mr. H. M. Stackhouse, constitute what might be designated the President's cabinet.

In the following review of departments it is not attempted to give all charges in personnel and details which have already been chronicled from time to time in my reports to the annual Board meetings. Only facts of outstanding interest will be included.

Last year, 1919-20, when so many college men left college teaching to go into commercial lines, Clemson had its share of losses. However, the score or more of new men who filled the vacated places proved in the main quite satisfactory.

The Academic Departments

The Academic Department includes four divisions—English, Mathematics, Physics, History, and Political Economy. This department is more directly related to the public school system of the State than are the purely technical departments. Upon the student's school preparation depends very largely his progress in the subjects taught by this department. I regret to say that the majority of our students are not thoroughly prepared in two very important subjects given in all our courses—Mathematics and English. Comparatively few high school students have had any adequate preparation in Physics, Chemistry, or Manual Training.

The work of the Academic Department is good and steadily improving.

The only changes in personnel in the department were among teachers of subordinate rank.

The Agricultural Department—Resident Teaching:

I feel particularly proud of the teaching work now being done in our Agricultural Department, not because it is better than the work of instruction in other departments, but because it is so much better than that given at most other southern A. & M. colleges.

The work of the department in Agricultural Education is especially worthy of mention. Ten seniors graduated in this work, and this group included some of the very ablest men in the class. I feel very strongly that the greatest work the college can do is to train teachers, county agents, and other missionaries of agriculture. Ten graduates going out to teach agriculture in our schools more nearly justifies the existence of the college than five times that number going out to engage in work for their individual benefit.

At present our teacher training work suffers from the lack of a local high school able to give the necessary practice training to our students. It is hoped that this need will be supplied another session by the Calhoun-Clemson school situated within easy reach of the college. Until that is done the schools at Pendleton and Seneca furnish the nearest facilities.

The regular college work of training agricultural teachers has been supplemented by our summer school, which in 1920 gave instruction to 46 teachers, and this past summer to 68.

Good progress has been maintained in developing our Dairy and Swine Departments. As an evidence of the interest in the live stock teaching it should be noted that the Clemson stock judging team won first place at the Southeastern Fair.

Quite an important phase of the work of the Agricultural Department is the vocational agricultural work given to the disabled soldiers.

The Chemistry Department:

This department is charged with all the teaching of Chemistry, with the fertilizer analytical work, and the chemical investigations for the South Carolina Experiment Station. At the opening of the fiscal year 1921-22 Dr. R. N. Brackett became Station Chemist as well as State Chemist.

The department is well equipped, well manned with competent chemists, and in all lines the work was excellent.

It is significant of their interest that of the six students who majored in Chemistry under Dr. Brackett this past session four are pursuing post graduate work at large universities of the East and West.

The Engineering Department:

During the year covered by this report there was a very distinct drift away from the agricultural and towards the engineering courses. The percent of freshmen in the Freshman Class was 44.3 per cent in Agriculture, and 55.7 per cent in Engineering. Every proper effort is made to check this drift and turn as many new students as possible towards agriculture.

In spite of several changes in personnel the teaching work of this department has been up to its usual standard of excellence.

The fifty-foot addition to the east wing of the main engineering building was at last finished, and adds greatly to the teaching facilities of the department.

The Military Department:

The work of this department is fundamental to efficiency in all lines of work at Clemson. Unless discipline is well maintained the reflex is felt in every class room in the college.

Under the able administration of Maj. J. M. Cummins, as Commandant, the 1920-21 session was one of the most satisfactory in the history of the college. It is with great regret that we received the War Department's order relieving Maj. Cummins of this detail in order that he might attend the Officers School of the Line at Fort Leavenworth. With the session 1920-21 Maj. Cummins rounds out six years service as Commandant at Clemson. His first four-year detail was from May 23, 1912 to February 17, 1916. His second detail began Sept. 1, 1920 and expired Aug. 30, 1921, with the order to report to Fort Leavenworth. Maj. Cummins was a most efficient commandant. In his dealings with the cadets he was strict, but just and kindly, and he was keenly interested in everything that pertained to their welfare, as well as in the mere maintenance of military discipline. He is deservedly held by them in highest esteem. Six years of service in double harness with Maj. Cummins leads me to state without reservation that he is one of the most loyal, devoted, and efficient officers the college has ever had,—one who could be depended upon in every emergency. And Maj. Cummins was not only a good commandant,—he was a good Clemsonite as well,—a good citizen

of our college community,—a good neighbor. He and his family will long be held in affectionate remembrance here.

The enrollment in the R. O. T. C. for the session was as follows:

| | |
|---|-------|
| In Freshman and Sophomore Classes ----- | 384 |
| In Junior and Senior Classes ----- | 232 |
| | <hr/> |
| Total ----- | 616 |

This total is approximately 87 per cent of the students who are eligible, and represents one of the highest R. O. T. C. enrollments of any college in the country.

During the session the inauguration of week-end privileges as rewards for good conduct and good class standing had a markedly good effect.

Maj. Cummins was succeeded as Commandant by Maj. Madison Pearson, who for a year and a half had been Associate Commandant. Under Maj. Pearson we confidently expect a continuation of the high standard of discipline and military instruction set by Maj. Cummins. It was a crowning compliment to Maj. Cummins that during his last session here Clemson was ranked as one of the four "Distinguished" colleges of the Fourth Corps Area.

Much of the work of the Military Department is covered under the Chapter on Student Affairs, to which I refer you.

The Textile Department:

The renewed interest in textile education noted in my report of last year continued in 1920-21. Not including freshmen who are not differentiated between the several engineering courses, there were in the Sophomore, Junior, and Senior Classes 98 students in the textile course. Quite a number of disabled soldiers also are taking vocational work in this department. On the whole the outlook for this very well equipped department hitherto lacking in its full quota of students, is most encouraging. In the main instruction given is excellent.

Until July 1, 1921, Prof. Doggett acted as "State Supervisor of Industrial Education," this work embracing the night and part-time schools carried on in textile centers. He was assist-

ed in this work by the Professor of Industrial Education, Prof. H. B. Adams. We paid half the salary of these officers and Mr. Swearingen paid the other half.

Having thoroughly established the work, the State Superintendent of Education, Mr. J. E. Swearingen, and I have agreed to allow Prof. Doggett to return to full-time college duties and Mr. Adams will take the full responsibility and make his headquarters in Columbia. With the increase of students and general growth of the Textile Department in recent years, Prof. Doggett can no longer divide his time equally between the college and the school field. Hereafter, Prof. Doggett's salary will be paid entirely from college funds, and he will be connected with the outside work only in an advisory capacity. Mr. Adams will be paid entirely by the State Board for Vocational Education.

The Treasurer's Office:

The volume of work has greatly increased in this office during recent years.

Ten years ago the total funds actually handled amounted to \$350,213.27; this year the total is \$1,513,349.74. Much of the money for public service now comes from federal government necessitating the making of exhaustive and time-consuming reports.

As always, the work of the Treasurer and his assistants has been of a very high order. The State Bank Examiner speaks of the condition of the books and accounts as "excellent."

The Public Utilities:

The Construction and Repair Division is now well up with its schedule or repairs to residences and public buildings. The addition to the main engineering building, the calf barn, and the hog barn, aggregating in cost about \$23,000. have been at last completed.

The cost of operating the Heat, Light, and Water Division during last fiscal year was \$43,888.09. The price of coal with the freight added, is still nearly double pre-war prices, and our labor is only slightly reduced.

The two boilers which were moved from the engineering building to the power station have now been in use for twenty-

eight years and the boiler inspector states that twenty-three years is an average age for this type boiler. However, he has not condemned the two in question, and we shall continue to use them until he does.

Even with our present load, if we are to have reasonable insurance against accidents, it will be necessary to install another boiler engine and generator. Our engine and generator capacity is now over taxed. Prof. Earle estimates that it will cost approximately \$25,000. to make these additions, and this addition is necessary now.

Our Telephone facilities are still inadequate, although somewhat improved. The Bell Telephone Co., has taken over this territory from the Oconee Telephone Co and has run a special line connecting us with their system at Seneca. They have also installed pay stations in the Guard Room and in the College Building which continue the long distance service after the local exchange has closed. These additions have improved our long distance service. As yet we have not been able to induce the Company to install a telephone exchange to serve the college community and contiguous territory. Such an exchange is greatly needed.

The college is fortunate in having a Campus equal in beauty to that of any college in the nation. It is a pity that money is lacking to properly develop it. However, under the general supervision of the Horticultural Division, great improvement has been made. The chief lack is a sufficient mileage of cement walks and hard surfaced roads.

As a Community, Clemson College suffers the disadvantage of being neither city nor country—lacking the facilities and amusements which characterize the city, and the abundance of food and fuel which characterize the country. There are no adequate markets within walking distance. When times become normal, and we have the money with which to do them, we should make it a policy not only to furnish the bare necessities of reasonable and comfortable living, but those comforts and conveniences which will make living at Clemson attractive as compared with other parts of the country. In this day of competition for the best men and women we will find ourself handicapped if we do not do everything we can looking to the comfort and contentment of our population.

The College Farm:

In January 1920 the college farm was transferred to the Experiment Station in order that the Agricultural work done might have a research as well as a utilitarian value. The farm raises on a cost basis the necessary feed stuffs for the dairy and animal husbandry division of the college and lends itself to experiments on a larger scale than is practicable on the limited lands of the present station. As heretofore, the farm will operate on a reinvestment basis, no appropriations being made for its support.

PART IV. THE PUBLIC SERVICE

The work of Clemson College is not confined to resident teaching. In fact an agricultural college is a great public service corporation, which must protect and serve the agricultural and industrial people of the State, as well as educate sons.

The public work of the college includes Regulatory Work, such as is required by law governing the movement of live stock, the control of contagious live stock diseases, the protection of buyers against diseased nursery stock and against plant diseases and insect pests, and the inspection and analysis of commercial fertilizers. This public work also includes the diffusion of agricultural information to the farmers and country children, stimulation of the schools by the offer of competitive scholarships, assistance in the school building program of the Department of Education by furnishing plans, etc., and in general is an effort to carry the benefits of the college to the largest possible number of people.

The total budget for public service nearly doubles the expenditures for the collegiate activities of the institution. and yet out of the total of \$682,540.60 expended in 1920-21, the State's part was only \$186,480.80. This is less than 3 per cent of the total legislation budget of 1921 and represents the entire contribution of South Carolina to that industry in which practically 85 per cent of our people are engaged. The following statement shows the kinds of service performed and the source from which the money comes.

EXPENDITURES FOR PUBLIC SERVICE FISCAL YEAR 1920.

| No. | Kind of Service | From Col- lege Funds. | From State Appropriat'n | From Federal Appropriat'n | From U. S. Dept. Agri. | From Counties, Sales, Etc. | Totals |
|-----|--------------------------------|--------------------------|----------------------------|------------------------------|---------------------------|-------------------------------|--------------|
| 1. | Agricultural Research..... | \$ 5,467.55 | \$35,683.96* | \$ 30,000.00 | \$..... | \$ 5,122.56 (Sales) | \$ 76,274.07 |
| 2. | Extension Service ..... | ..... | 81,070.00† | 130,297.88 | 40,300.00 (a) | 151,256.93 (d) (Counties) | 402,924.81 |
| 3. | Live Stock Sanitary Work ..... | ..... | 33,435.31** | ..... | 14,213.42 (b) | ..... | 52,648.73 |
| 4. | Tick Eradication ..... | ..... | 19,973.19† | ..... | 36,295.60 (c) | ..... | 56,268.79 |
| 5. | Hog Cholera Serum ..... | ..... | ..... | ..... | ..... | 37,920.89 (Sales) | 37,920.89 |
| 6. | Crop Pest Commission ..... | ..... | 11,318.34§ | ..... | ..... | ..... | 11,318.34 |
| 7. | Fert. Inspec. and Anal | 29,952.51 | ..... | ..... | ..... | ..... | 29,952.51 |
| 8. | Scholarships and Ads. | 12,749.10 | ..... | ..... | ..... | ..... | 12,749.10 |
| 9. | Miscellaneous | 2,483.36 | ..... | ..... | ..... | ..... | 2,483.36 |
| 10. | TOTALS | \$50,652.52 | \$186,480.80 | \$160,297.88 | \$ 90,809.02 | \$194,300.38 | \$682,540.60 |

† Of this total Winthrop used \$116,766.43 for Home Demonstration Work with Women.

* Appropriation for full calendar year 1921, \$50,000.

§ Appropriation for full calendar year 1921, \$10,000.00.

** Appropriation for full calendar year 1921, \$50,000.00.

Appropriation for full calendar year 1921, \$20,000.00.

It will be noted that lines of service 1, 2, 3, and 4 are carried on in co-operation with U. S. Dept. of Agri.

Item (a), (b), (c) in Column six are paid by the Treasurer of the U. S. and Item (d) in Column seven by County Treasurers, Chambers of

Commerce, etc.,—all on vouchers approved by proper college officers.

AGRICULTURAL RESEARCH WORK:

Agricultural research is at the basis both of agricultural teaching and agricultural extension. One effect of the world war was to increase the public appreciation for research, whose value in the emergency was clearly demonstrated in concrete form. This public recognition has led to an increased demand for the services of the station, which demand the Agricultural Experiment Station has been unable to meet because of its lack of funds. With practically a fixed income from the Hatch & Adams Acts and greatly increased costs of salaries and materials, it was not possible to maintain even pre-war programs. In this emergency the college appealed to the Legislature for assistance and an appropriation of \$25,000 in 1919 and \$50,000. in 1920 was made. But for this appropriation the work during the past two years would have suffered greatly and much of it would necessarily have been abandoned.

The Agricultural research work of the S. C. Experiment Station includes:

1. The parent experiment station at the college,—this station including the college farm.
2. The branch stations located at Florence and at Summerville.
3. Co-operative agricultural research carried on with individual farmers.

A full account of these activities is contained in the very interesting report of the Director of the Experiment Station which is appended to this report as page 91. With the advance of the boll weevil and the necessity of diversification, there never was a time when agricultural research was more necessary than at present.

THE EXTENSION SERVICE:

The total fund available for extension service as shown in the preceding tabulation on page 29 was \$402,924.81. Of this amount \$40,300.00 was disbursed by the Treasurer of the United States, and \$151,256.73 by the county treasurers. Of the total for extension service, Winthrop College expended on Home Demonstration Work for Women \$116,766.43.

The terms of the Smith-Lever Act under which this work is organized is now too well known to need detailed exposition here. The following are its principal features:

1. Only a college receiving the benefits of the Land Grant Act of 1861 (the "Land Grant College") can be selected by the Legislature to administer the extension work provided for under the Act. (The Legislature in 1915 designated Clemson College to carry on this work.)

2. The funds arising under the Act cannot be used for educational work done at the college, but only for giving instruction and practical demonstrations in agriculture and home economics to persons *not attending the college*. (The college is merely the agent to administer the fund—not the beneficiary of it.)

3. For the maintenance of the work there is permanently appropriated \$480,000 per annum, or \$10,000 for each state which accepts the provisions of the Act. In addition, there is appropriated \$600,000 for the second fiscal year of operation, 1915-16, and for each year thereafter for eight years, \$300,000 additional, until a total of \$4,100,000 is reached. This, with the \$480,000 makes a total of \$4,580,000 and continues as a permanent annual appropriation. Unlike the initial appropriation of \$480,000 the additional appropriations are not equally divided among the states, but are to be allotted annually to each state in the proportion which its rural population bears to the total rural population of the United States, based on the last preceding census. *They are also conditioned upon the state's making an equal provision.*

Based on the 1910 census, South Carolina is entitled to 2.61 per cent of the additional appropriation. The 1920 census affecting the final appropriation is slightly more and gives South Carolina an advantage,—at least until the next census.

| | From July 1st | Federal Appropriation | State Appropriation | Total |
|---------------|---------------|--------------------------|------------------------|--------------|
| 1914—1st year | ----- | \$ 10,000.00 | \$ 00,000.00 | \$ 10,000.00 |
| 1915—2nd year | ----- | 25,691.15 | 15,691.15 | 41,382.30 |
| 1916—3rd year | ----- | 38,767.11 | 28,767.11 | 67,534.22 |
| 1917—4th year | ----- | 51,843.07 | 41,843.07 | 93,686.14 |
| 1918—5th year | ----- | 64,919.03 | 54,919.03 | 119,838.06 |
| 1919—6th year | ----- | 77,994.99 | 67,994.99 | 145,989.98 |
| 1920—7th year | ----- | 91,070.95 | 81,070.95 | 172,141.90 |
| 1921—8th year | ----- | 104,146.91 | 94,146.91 | 198,293.82 |
| 1922—9th year | ----- | 120,862.65 | 110,862.65 | 231,725.30 |

4. The Act further provides that the extension work is to be carried on in a manner mutually agreed upon by the Secretary of Agriculture, and the College. Before the Federal funds become available plans for the work must be approved in Washington.

Organization:

The Agricultural Department, with its divisions of agronomy, animal husbandry, botany, dairying, entomology, horticulture, chemistry, and veterinary science, is the machinery by which *Agricultural Research, Extension, and Teaching are all carried on*. Each division is under a chief, who is responsible for the successful prosecution of the work in these three lines of service. Prof. W. W. Long is director of Agricultural Extension Service; Prof. H. W. Barre of Agricultural Research; and Dr. F. H. H. Calhoun of Agricultural Teaching. In each division are grouped specialists in all three lines, teaching, research, and extension.

It is often suggested that the extension service ought to be located at some central point in the state. This view arises from a misapprehension of the nature of the extension service. The Extension Service of the college represents a *service of the whole Agricultural Department, rather than a mere subdivision of it*. It means the extension of the benefits of the Agricultural Department at the college beyond the confines of the campus to the people of the state.

There is a tendency too to confuse the *regulatory work* with the *Extension Service*. Actually there is little connection between them—often none. Our veterinary service, tick eradication, crop-pest control, etc., *are in no sense parts of the Extension Service*. The one is primarily *regulatory* and the other is primarily *educational*. As a matter of fact, the Smith-Lever funds cannot be used for doing strictly regulatory work.

In accordance with an understanding with Winthrop College, 25 per cent of the Smith-Lever Extension Fund, both state and federal, together with county appropriations for that purpose, are devoted to Home Demonstration work with women and girls. Under the Smith-Lever Act and the laws of this state, the Extension Service of Clemson College is responsible for all forms of extension work in South Carolina.

However, there is no legal impediment to the designation of Winthrop College as Clemson's agency for carrying on the work for women and girls, and such an arrangement is both wise and logical. Miss Christine South, the State Agent in Home Demonstration, is located at Winthrop under the immediate supervision of President D. B. Johnson.

In order to have a fair division of funds between the counties in the state, the Trustees some years ago adopted the following standing rule:

"That after deducting the portion that goes to Winthrop College under the memorandum of understanding between Clemson College and Winthrop College, and after paying overhead expenses and the cost of specialists, the remainder of the Smith-Lever Fund be apportioned equally to the support of county agents in all counties of the State in which the work is carried on."

The greatest difficulty in extension service is to obtain and hold competent county agents. The average salary paid during the year was \$2409.52, with an allowance of \$400.00 for automobile travel. The cost of owning and operating an automobile, including depreciation is at least \$600.00 per year.

Mr. Long's admirable report covering the Extension Service for the year is appended hereto. Its reading must convince anyone of the immense value of the Extension Service and its unique opportunity for service at this time of depression and demoralization among our farmers. The county agent system is the only organized agricultural machinery in South Carolina for promoting state-wide movements, for cotton warehousing, cotton marketing, and the like.

So thoroughly is this service entrenched in the estimation of the people that the trouble is to meet the many demands made upon agents and specialists.

The money which the state puts into extension service is a real investment returning an hundredfold in actual values the cost of the work.

LIVE STOCK SANITARY WORK:

The live stock sanitary work includes the following lines:

1. Tick eradication.
2. Tuberculosis eradication.

3. Hog cholera control.
4. Investigation and control of contagious outbreaks.
5. Quarantine against introduction of diseased live stock.

The importance of the live stock sanitary work has steadily grown with the advance of the boll weevil. An important item in the program of diversified farming to meet boll weevil conditions must be the introduction of a certain amount of live stock work on every farm. Until the tick could be eradicated and proper provision made to protect live stock against contagious importations and contagious outbreaks, it was not to be expected that farmers could be induced to purchase purebred live stock. If any evidence is needed of present interest in fine stock development it is found in the splendid display of beef and dairy cattle and swine at the state fair. "As the ticks go out, good cattle come in."

Gradually the Live Stock Sanitary work, formerly located at the college, has been in process of transfer to Columbia. with Dr. W. K. Lewis, All live stock sanitary work will now be done under his supervision, and from the Columbia office.

The work is carried on by the State Veterinarian in Charge, a laboratory assistant, the necessary clerical and office force at Columbia and by twelve assistant state veterinarians in the pay of the state, and four veterinary inspectors in the employ of the Federal Government. The assistant state veterinarians are stationed about in the state at strategical points so as to be easily accessible to calls for assistance and for consultation by live stock owners. These veterinarians held 9322 interviews and consultations, investigated 3114 calls, and made 1136 sanitary surveys, and visited 4250 farms. Each veterinarian is required to own his own car and is allowed seven cents mileage for its use in service.

To give further service promptly 26 private veterinarians all over the state have been made deputy state veterinarians on a per diem basis. This, at a minimum of cost, greatly extends the possibility for prompt and ample service.

A full list of all employees in Tick Eradication and Live Stock Sanitary Work will be found in the report of the State Veterinarian on page 157.

| | |
|--|---------------------|
| By the U. S. Department of Agriculture-- | \$465,464.19 |
| By State appropriations ----- | 216,000.00 |
| From Clemson College funds ----- | 54,104.00 |
| From county contributions (1913) ----- | 1,083.00 |
| Total ----- | <u>\$736,651.14</u> |

Since the State's fiscal year extends from January 1st to the following December 31st, the State Veterinarian's report is made from January 1, 1919 up to November 1. Attention is directed to this fact because most of the other reports are for the college fiscal year, July 1st to the following June 30th.

The work of Tick Eradication was begun in South Carolina on small college funds in 1907. Up to November 1, 1921 the following total expenditures were made for this work:

With this expenditure the entire state has been released from federal quarantine and the state cleared of cattle tick except in Coast counties. In most of these counties, free range conditions have existed ever since tick eradication began. Under free range conditions the only practical method of tick eradication is to drive up the cattle periodically and dip them. This process of clearing a given territory is one of infinite slowness and uncertainty. With the state-wide stock law effective January 1, 1922, the complete clearing of the state should be speedily accomplished. In seven counties "clean up" work is still going on, but this should be completed this year and next.

The work of Tuberculosis Eradication in dairy herds has been very successful. Since 1917, when this work was begun, 1578 herds, aggregating 35,512 cattle, have been tested; 632 were found infected. Sixty-six herds in South Carolina are now accredited, and 463 herds have passed the first test necessary to being accredited.

No work has been more important or needed than the control of Hog Cholera which is most prevalent in the lower part of the state. In all, 49,889 head of hogs were inoculated with serum and bacterins. It is the policy of our service to distribute hog cholera serum and other bacterins at cost, reinvesting the amounts received in additional serum. The

total sales for the fiscal year, as shown by the sales records of the State Veterinarian, amounted to \$41,953.26.

Other Contagious Diseases in addition to hog cholera and tuberculosis were promptly investigated by our veterinarians.

CROP PEST COMMISSION.

The Crop Pest Commission is constituted under the laws of the State of South Carolina to safeguard the agricultural interests against the importation of diseased seed and nursery stock, and to combat insect pests and plant diseases. The Agricultural Committee of the Board constitutes the Crop Commission. Mr. J. E. Wannamaker, of St. Matthews, is the Chairman.

The Legislature, at its session in 1920, for the first time made an appropriation for financing this work, the college finances not being equal longer to carrying the burden. This appropriation is necessary to pay the salaries of the experts, including part salary of the State Entomologist and the State Pathologist, the salaries of inspectors, travel, cost of nursery tags and other supplies, and the cost of the clerical work incident to the large correspondence and service rendered by the Commission. The Crop Pest Commission constitutes, as it were, the "Agricultural Board of Health" of the state, and no investment which the state makes brings larger results by way of protection and actual returns to the farmers than the above appropriation.

The report of the State Entomologist and the State Pathologist, which is attached hereto, is very interesting as showing the wide scope of the work and the efficiency with which it was done. The state is now completely infested with the Mexican boll weevil, but outside of our borders are a number of pests which will do great damage if not kept out by strict quarantine. Among these may be mentioned the pink boll worm now established in Texas and Louisiana, the European corn borer which is causing trouble in the New England states, the Japanese beetle introduced into New York and Pennsylvania, and the brown tail and Gipsy moths which occur here and there in the northern states. The sweet potato borer prevalent in Florida and Georgia, is a real menace

to the sweet potato industry and must be kept out by vigilance and strict quarantine laws. Among the plant diseases the prevalence of cotton anthracnose and cotton wilt exact large penalties.

Great progress has been made recently in getting uniformity in our regulations. Conferences between the Entomologists of the southern states have led to the adoption of regulations as nearly uniform as the different state conditions would permit.

FERTILIZER INSPECTION AND ANALYSIS:

Under the laws of the state, the Board of Trustees of Clemson College is charged with the inspection and analysis of all commercial fertilizers sold within the state. The Board of Trustees delegates its authority to a special committee known as the "Board of Fertilizer Control" which gives special oversight to enforcing the fertilizer laws. This Board of Control consists of Messrs. Richard I. Manning, Chairman; J. E. Wannamaker, H. C. Tillman, J. J. Evan, and the Chairman of the Board of Trustees, Hon. Alan Johnstone, ex officio.

The work of inspection is under the immediate charge of Mr. H. M. Stackhouse, Secretary of the Board of Fertilizer Control and the analytical work is done in the Chemistry Department under the supervision of the Chief Chemist, Dr. R. N. Brackett. A full report from each of these officers accompanies this paper.

Mr. Stackhouse reports 1920-21 sales as 526,416 tons of fertilizer and 89,964 tons of cotton seed meal. The total tonnage was 616,280 as compared with 1,253,890, in 1919-20,—about half as much.

The total number of samples collected by the twelve inspectors who were in the field was 799, as compared to 1,802. Of these only 36 were farmers' samples.

The season of 1921 was very late in beginning, the movement of fertilizers not beginning until after the middle of March. Cotton seed and acid were the principal ingredients used.

It is notable that with the return of kainit and other foreign brands, American Potash seemed to have disappeared from the market.

AGRICULTURAL AND TEXTILE SCHOLARSHIPS:

Under the laws of the state the total number of scholarships offered at Clemson is 170 four-year scholarships and 53 one-year agricultural scholarships. Of these scholarships only 80 of the regular four-year scholarships and 10 of the one-year agricultural scholarships were filled. This left 90 four-year and 43 one-year places vacant.

Of the total number of scholarships filled 63 per cent were held by farmers' sons and the remainder by the sons of merchants, professional men, etc.

During recent years there has been a steady decline in the demand for scholarships, probably due until this past session to the increased prosperity of the times. Also the lessened proportional value of the scholarships, and the more rigid scrutiny by the State Board of Public Welfare has made the scholarships less sought after. It might be interesting to know that since the establishment of the scholarships in 1904 the college has had to expend from its current funds \$276,967.38 for their maintenance, the Legislature making no appropriation for the scholarships at Clemson as it does for other state institutions.

The one-year agricultural course is a most useful one to prepare young men to become practical farmers, and yet it has always been difficult to get an appreciable attendance for such a course. It is hoped that through the increased efforts of the home demonstration agents and the county agents that more students will enter this course in the future.

CO-OPERATIVE WORK UNDER THE SMITH-HUGHES ACT.

The purpose of the Smith-Hughes Act is to stimulate vocational training by the schools of the state. The first requirement for success in this movement is competent teachers. With the creation of the Division of Agricultural Education four years ago, the college sought to meet a pressing need by training graduates in agriculture to teach successfully in the high schools established under the Smith-Hughes Act. Not only are teachers of agriculture trained at the college, but the work of the division includes cooperative work with the Superintendent of Education in assisting the schools

by the preparation of suitable leaflets and texts to be used in connection with teaching agriculture. The work of the regular session was also supplemented by a summer school at which competent teachers of academic subjects could be given the necessary technical training to prepare them for agricultural teaching. Also, beginning with the session of 1918-19 Prof. C. S. Doggett, Director of the Textile Department, began the organization of industrial education in various mill centers in the state. In this work he was assisted by Prof. R. B. Adams, and both of these officers received part salary from the college and part from the Smith-Hughes fund. In order to get teachers who were acquainted with the textile industry and allied subjects, it was necessary to take men already trained in these lines and who had sufficient education and give them the additional coaching needed to qualify them to teach.

In South Carolina there are two main lines of industry—agriculture and textiles. For that reason the Smith-Hughes work has been directed into these two fields. In time to come it will no doubt be desirable to to organize instruction in other lines, but at present that seems hardly necessary.

This work is almost entirely financed by Smith-Hughes funds through the State Board of Vocational Education. The expenditures for the year, \$17,683.76, were paid by the College and reimbursed by the State Board at the end of the fiscal year.

Wherever the work of the college extends into the school field, that phase of its work is under the supervision and direction of the State Superintendent of Education, Mr. J. E. Swearingen, to whose hearty cooperation and wise counsel we are greatly indebted for such success as has been attained.

MISCELLANEOUS:

In addition to the lines of public service described in this chapter, the college in its Textile Department manufactures and sells at cost South Carolina flags.

In the Drawing Division of the Engineering Department plans for rural school buildings are prepared and distributed without cost. The State Superintendent of Education has

stated repeatedly that this assistance to the school-building program of the state has been the most important single contribution of the college to the schools. It is to be regretted that larger funds are not available so that field inspection and supervision could be given to the making and carrying out of these plans.

PART V. STUDENT LIFE AND INTEREST

THE COST OF EDUCATION AT CLEMSON:

It has always been the purpose of the Board of Trustees to keep the cost of education at Clemson as low as possible consistent with reasonable contentment and efficiency.

The rapid rise in the price of provisions and labor, together with the complaints heard during the spring of 1920, necessitated an increase in the charge for board to \$20.00 per month. Laundry supplies, coal and all other items entering into the living expenses of the students had also increased, and uniforms were at peak prices.

The following is an exhibit of the charges for the session covered by this report:

FOR SESSION OF NINE MONTHS

| | 1920-21 | |
|---------------------------------------|---------|----------|
| Board—9 mos. @ \$20.00 | ----- | \$180.00 |
| Laundry—9 mos. @ \$1.65 | ----- | 14.85 |
| Heat, Light and Water—9 mos. @ \$2.25 | ----- | 20.25 |
| Medical fee—9 mos. @ \$1.35 | ----- | 12.15 |
| Incidentals—9 mos. @ \$1.00 | ----- | 9.00 |
| Matriculation fee | ----- | 3.00 |
| Laboratory fee | ----- | 2.25 |
| Breakage fee | ----- | 3.00 |
| Student Activity fee | ----- | 12.00 |
| Uniforms (dress and service) | ----- | 84.90 |
| Total for 9 months | ----- | \$341.40 |

This gives an average maximum cost of \$1.26 per day during the session for those cadets who do not pay tuition. Tuition (\$40.00) is not included in the above analysis because only about half the student body pays it.

The average cost of uniforms to students after the first year is usually not more than one-third of the item given above.

R. O. T. C. students in all classes received from the War Department \$36.00 as commutation for uniforms. Junior and Senior students in the advanced course R. O. T. C. received about \$147.00 as commutation for subsistence, as well as the \$36.00 on uniforms.

For 1921-22 the board has been reduced to \$18.00 per month, the laundry to \$1.50 per month, and the cost of uniforms to \$28.15, making the total cost for 1921-22 \$239.90 for the nine months session.

THE CADET FUND:

The following is a statement of the Cadet Fund for 1920-21:

| No. | Item | Received | Expended | Balance | Deficit |
|---------------------------------|------------------|-----------------|--------------|------------|----------|
| 1— | Subsistence | \$154,847.53 | \$148,550.83 | \$6,296.70 | \$----- |
| 2— | Uniforms | 36,351.70 | 36,734.20 | ----- | 382.50 |
| 3— | H. L. & W. | 13,639.14 | 13,532.53 | 106.81 | ----- |
| 4— | Laundry | 14,809.67 | 14,809.67 | ----- | ----- |
| 5— | Hospital | 9,505.17 | 9,499.74 | 5.43 | ----- |
| 6— | Incidentals | 5,902.10 | 5,190.76 | 711.34 | ----- |
| 7— | Breakage | 2,284.36 | 2,284.36 | ----- | ----- |
| 8— | Diplomas | 624.75 | 641.33 | ----- | 16.58 |
| 9— | Student Act. Fee | 8,478.58 | 8,554.96 | ----- | 76.38 |
| Totals | | \$246,443.00 | \$239,798.18 | \$7,120.28 | \$475.46 |
| Net balance on 1920-21 business | | -----\$6,644.82 | | | |

SUMMARY TO JULY 1, 1921.

| | |
|-----------------------------------|--------------------------------------|
| Brought forward, July 1, 1920 | -----\$3,362.65 |
| Bills payable, replacements, etc. | -----2,158.98 |
| | <u>\$1,203.67</u> |
| Balance on 1920-21 business | -----6,644.82 |
| | <u>Carried forward, July 1, 1921</u> |
| | * \$7,848.49 |

* Note: This represents net balance of 1-2 of one per cent of \$1,517,221.44, covering a period of ten years (July 1, 1911 to July 1, 1921), and represents about 13 days board.

It has been the policy of the college to give back to the cadets in service all that they pay. Of course it would be neither legal nor proper to use college funds (further than the scholarships created by law provide) to pay for the living expenses of the students, and this is not done.

THE MESS HALL AND KITCHEN:

During a session, approximately 562,000 meals are served in the mess hall to the cadets. It would take a family of five 102 years to serve as many. It is not only possible but likely, that once in a while something will go wrong. However, an inspection of this great dining room and kitchen will convince any one that nothing is left undone to give the best service possible for the price paid. At \$20.00 per month the amount available per meal is only 22 cents, out of which must come labor, supervision, fuel and other costs, as well as food. No detail of the college organization has received more attention than the mess hall during the past few years, and its equipment and refrigeration facilities are the very best. A tile floor throughout was laid during the summer of 1920 and is the last detail necessary for ideal conditions.

On January 18th, 1921, fire partially destroyed the kitchen, commissary, dishwashing and serving room, and damaged or destroyed a large part of the equipment. With the insurance collected and some additional expenditure the damage was repaired and now we have one of the best culinary plants in the country,—one large enough to handle twice our present attendance. Mr. Harcombe, our new mess officer, gave excellent satisfaction throughout the session.

BARRACKS ACCOMODATIONS.

In regard to living conditions in the barracks, I quote the following paragraph from a report of Col. Cummins to me, which was incorporated in my report to you last year:

“Barracks conditions that have to do with the comfort and convenience of the cadets cannot be surpassed in this section of the country. I was sent on an inspection tour in connection with R. O. T. C. work to ten institutions in Tennessee, Georgia, North and South Carolina, and in no place that I visited

were the appointments and arrangements comparable to those that we have here. The students in a good many of these institutions sleep in double-deck beds, in small rooms, and have a mess that does not compare favorably at all with the mess at the college. The cadets here are in great good fortune that they have such comfortable and convenient quarters."

CADET HOSPITAL:

Dr. A. M. Redfern, the college surgeon since the opening of the college in 1893, resigned September 1920, on account of ill health. For over a quarter of a century Dr. Redfern has efficiently looked after the health of the Clemson student body. Both as a doctor and as a man Dr. Redfern is held by students and faculty alike in grateful and admiring remembrance.

Dr. Geo. D. Heath (U. S. A. retired) of Chester, was elected to succeed Dr. Redfern. Dr. Heath has had both army and civilian experience, which should particularly well qualify him for the work at Clemson.

Our present hospital while enjoying a wonderful record for efficient service, is subject to the criticism of being out of date. When built, nearly thirty years ago, it was doubtless considered entirely adequate.

The Board therefore, in 1914, made the necessary appropriation to build a new and up-to-date hospital on the beautiful site overlooking Bowman Field. The plans were completed and the brick delivered at the site, when the world war broke out. The price of cotton dropped, and with it our fertilizer tax, so that it has been impossible to go forward with the project. There being no prospect of building a new hospital in the near future, the Board at its meeting in July 1920 made a substantial appropriation to put in a steam heating system and make needed internal changes and improvements. These have been finished and add greatly to the appearance and utility of our old hospital. During the session quite a good deal of surgical and hospital equipment has been purchased, a full-time trained nurse added to the staff, and in general much improvement made.

HEALTH AND SANITATION:

As before stated, we have gone through this year without an epidemic of any kind, despite the fact that both influenza, mumps, and measles made their usual appearance. This has been due largely to Dr. Heath's policy of requiring cadets who were at all sick to remain in the hospital, and not circulate among the student body on an excused-from-duty status.

The total number of separate hospital cases was 303, which is a reflection of the above policy. The average length of detention in the hospital was $3\frac{1}{2}$ days. In point of numbers, ordinary colds led with 91 cases, and tonsillitis came second with 36 cases. Eleven serious cases necessitating operations or special treatment were sent to other hospitals. There were two serious accidents during the year—Cadet G. C. Albright, of Laurens, having his leg broken in football; and Cadet W. C. Cook, of Kershaw, losing an eye in an accident in the chemical laboratory. There were three or four serious cases of pneumonia and pleurisy, but none proved fatal. The only death occurring was that of Cadet J. R. Inman of Charleston, who died of typhoid fever June 18, after being taken home sick at the end of the session.

The hospital has been kept in immaculate condition, fully up to army standards of cleanliness. The additional equipment approved at a previous meeting has gone to good purpose, and Dr. Heath now has an equipment which will take care of anything except extensive epidemics. In fact, the present condition of the hospital makes it less necessary than before to proceed with building a new one.

Dr. Heath added a trained nurse to the hospital staff, and one of the students who had been in the medical service took the place of interne formerly filled by Mr. Gordon, who died during the summer of 1920. These, with a maid, cook and janitor, make up the hospital force.

DISCIPLINE:

The importance of discipline has been elsewhere emphasized in this report.

Our method of administering discipline under our new

regulations, which give to the Commandant and the cadet the opportunity to agree upon a punishment without trial by the Discipline Committee, has worked very well indeed. Twenty or more cases have been thus accounted for which otherwise would have consumed the time and attention of the Discipline Committee.

The following is the demerit record of the corps of cadets for the three terms of the session:

During the first term 432 cadets, or 62 per cent of the corps, received less than twenty demerits, the limit beyond which a cadet is excluded from the honor roll. During the second term 71 per cent, and during the third term 70.5 per cent attained the same standard. An average of 454 students, or nearly one-third of the corps, had perfect term records—i. e., no demerits.

During the first term, seven cadets exceeded the limit of demerits; during the second term only one exceeded it; and during the third term six exceeded the term and sessional limits. In other words, out of the total of corps in barracks only eleven failed to meet the standard required for remaining in college.

During the session the Discipline Committee tried ten cases; six were found guilty and four acquitted. Of the six found guilty, two were dismissed, three suspended, and one given local punishment.

RELIGIOUS INFLUENCES:

Four churches representing the Presbyterian, Methodist, Baptist, and Episcopalian denominations, are located near the college and cadets worship in the churches of their choice every Sunday morning during the session. Chapel services are held in Memorial Hall every morning except Saturday and Sunday. The college contributes \$500 to the salary of each of the four resident ministers, and in return they do pastoral work among the students in barracks. The college also contributes \$500 to the salary of the general Y. M. C. A. Secretary. Attendance upon chapel and church service is required, except in the case of Catholics and Jews, who have no churches at the college.

RECREATION AND STUDENT AFFAIRS:

Play is necessary as well as work in a well rounded college life. The college plant includes along with class rooms and laboratories, proper facilities for rest and recreation. The Y. M. C. A. building, with its swimming pool, bowling alleys, etc.; the Bowman athletic field, and Riggs Field, 400 by 1,000 feet, furnish ample facilities for healthful outdoor exercises. Among the principal lines of student activities, in addition to the various lines of athletics, may be mentioned the six literary societies, class dance clubs, and the student publications—The Tiger, The Chronicle, and Taps.

The Student Activity Fee has been a great thing for the student body, as well as for the parents. For a fixed sum, which parents can know in advance, all cadets have had free admission to college activities and received without further charge the regular college publications. This democratization of college opportunity has resulted in increased pleasure for the students, and an increased interest in all those affairs with which students should properly concern themselves.

Prof. D. H. Henry, occupying for the first year the newly created position of Director of Student Affairs, has had general oversight of all student activities and the administration of the Cadet Fund. He has discharged his duties with efficiency and to my entire satisfaction.

The Encampment of the cadets at the State Fair passed off successful in every way. The cadets behaved well and there was no sickness or accident.

PART VI. APPROPRIATIONS FOR PUBLIC SERVICE—1922.

In accordance with the practice of twenty-five years, the college is not asking appropriations for its collegiate work. Its recommendations are confined to those *non-collegiate activities* which the Legislature has been supporting. This represents about 5 per cent of the total taught and is the State's sole direct contribution for agricultural betterment

in a commonwealth 85 per cent of whose people are engaged in agriculture.

The following is a list of the appropriations granted in 1921 and our recommendations for 1922:

| Lines of Service | Appropriated in 1921 | Recommended for 1922 |
|-----------------------------------|----------------------|----------------------|
| 1. Extension Service ----- | \$94,147.15 | \$110,862.65 |
| 2. Agricultural Research ----- | 50,000.00 | 50,000.00 |
| 3. Tick Eradication ----- | 20,000.00 | 20,000.00 |
| 4. Live Stock Sanitary Work ---- | 50,000.00 | 50,000.00 |
| 5. Crop Pests & Diseases ----- | 10,000.00 | 10,000.00 |
| 6. Slaughter of Diseased Stock -- | 2,000 00 | 2,000.00 |
| Totals ----- | \$226,147.15 | \$242,862.85 |

These lines of public service are so well established and so well known and depended upon by our people, I am sure that no lengthy explanation is necessary. Therefore, I will make only a brief and concise statement in regard to each.

1. The *Extension Service* item is the only one in the list which has been increased, and this increase is made necessary by the provisions of the Smith-Lever Act, which were acceded to by the General Assembly in 1912. With this increase the amount to be appropriated annually now becomes stationary at \$107,342.99. The Federal Government matches the state appropriations dollar for dollar, with \$10,000.00 added. Not to do our part would of course involve us in the loss of an equal amount from Federal sources.

With the coming of the boll weevil into South Carolina it is necessary for the Extension Service to take the leadership in lines of diversification. It will be most advantageous for us to add an additional specialist in plant breeding, who would specialize in community cotton growing so that an ample supply of cotton seed of the right variety for planting under boll weevil conditions may be produced. Tobacco must also play an important part in some sections of our state, but at present our people lack experience and training to go into this new line. As an example: the tobacco crop of South Carolina in 1921 averaged only 7 cents per pound, while the average price of North Carolina and Virginia to-

bacco was over 15 cents. This would indicate the necessity for teaching our people to raise tobacco of better quality, and market it more intelligently. Peanuts are also attracting attention as a substitute crop and we need a specialist in the field who has had actual experience and the proper training in peanut production. Also, we need farm management specialists to assist the farmers in working out questions of cost of production and other farm management problems. Never was the demand upon our Extension Service more insistent, and if we are to render additional service it can only be done if we have additional funds.

2. *Agricultural Research* is at the foundation of the agricultural prosperity of the State. The usual appropriation here requested represents the only money spent by South Carolina in solving its agricultural problems. Without Agricultural Research the Extension Service would have little to extend, and the instructors little to teach. Other than the state appropriations research is supported only by \$30,000 through the Federal Hatch and Adams Fund. But for the Legislative appropriation a large part of the agricultural experiment station work at the College and at the branch stations at Summerville and Florence would have to be abandoned right at the time when our people are most in need of guidance along new paths. I quote the following interesting statement from report to me by Director Barre:

"The agricultural research workers in South Carolina during the past thirty years have in a large measure pointed the way to improved practices which have been instrumental in increasing and cheapening production, and improving the quality of our products, and in the general advancement of our agriculture. Soil fertility and fertilizer studies have yielded results which can not be measured in dollars and cents. Control measures for diseases and insects are resulting in millions of dollars saved each year. Plant diseases alone take a toll of twenty million dollars a year in this state. Cotton anthracnose, the most important plant disease in the state, is now practically under control, as results of the work of this station, and a saving of more than a million dollars a year to our people is the result.

"It is during periods of uncertainty and depression that agricultural research is most appreciated, and the results of the experiment station work are most in demand. Our workers are looked to as the chief technical advisors along all agricultural lines, and then can only direct this great enterprise along safe and sound lines in so far as they have scientific data upon which to base their conclusions and recommendations. Reliable agricultural information can of course be derived only from intelligently planned and carefully conducted experiments.

"The agricultural products of South Carolina for 1919 were valued at five hundred seven million dollars (\$507,000,000) and those of 1920 at two hundred eighty-two million dollars (\$282,000,000). If only one-tenth of one per cent of this latter amount could be devoted to finding out new facts about this, our chief industry, many puzzling problems which are now retarding the progress of our people could be solved and our future agricultural development assured. The average income from agricultural products in South Carolina in 1920 amounted to nearly forty-one dollars (\$41.00) per acre for each acre of cultivated land. Less than one cent per cultivated acre was spent for agricultural research.

"We should ever keep in mind that anything that increases and cheapens production, benefits the whole people. It not only increases the profits of the producers, but it furnishes necessities for the consumer at a lower cost."

3. The item for *Tick Eradication* remains unchanged. But for the free range conditions existing in the lower counties tick eradication in South Carolina would now be completed. With the state-wide stock law going into effect January 1st, a rapid completion of this work may be expected.

4. The *Live Stock Sanitary Board* which is in charge of the live stock sanitary work, is to live stock what the State Board of Health is to humans. Protection against the importation of diseased live stock, the control of contagious outbreaks such as hog cholera, anthracnose, blackleg, etc., and the testing of dairy cows for tuberculosis are a few of the activities of our sanitary office located at Columbia. With the necessity under boll weevil conditions of turning to a more diversified agriculture, the amount and value of live stock has steadily increased. This is testified to by the excellent live stock exhibits at the last state fair. In reality

our live stock industry is one of our principal assets, and exceeds our cotton crop in value. As the industry increases the demand for veterinary service also increases. We have not increased the usual appropriation, which represents less than one-tenth of one per cent of the value of the live stock in South Carolina expended for its protection.

5. For *Crop Pest and Diseases* no increase is requested, \$10,000 is sufficient to carry on this work efficiently. Perhaps no single appropriation for control work is more important or productive than this. But for the vigilance of the State Entomologist and State Pathologist, and their assistants, South Carolina would soon be flooded with plant diseases and crop insect pests brought into the state through diseased plant and nursery stock. Many of these are now almost at South Carolina's door and some of them have even gained a foothold. There is no agency but the Crop Pest Commission to guard the state from their ravages.

6. *Reimbursement* of live stock owners for animals destroyed in the control of contagious diseases is required by law. Because of the increase of interest in dairy cattle free from tuberculosis, the amount of last year's appropriation was not sufficient to pay all claims in 1920-21. The amount asked for is really insufficient, but we have thought it best not to increase the item, but to rely upon the Governor's contingent in case of necessity.

In presenting these appropriations the College does not come as a suppliant, begging that they be made. The College regards itself rather as an agent of the Legislature to carry out willingly and efficiently whatever amount of public service the General Assembly is willing to support. The duty of the College is done when it presents these needs. It is for the Legislature to say how much of the service indicated by us as needful shall be done.

PART VII. THE PRESENT SESSION, 1921-22.

ATTENDANCE 1921-22:

At the time of writing this report, December 10th, we are in the midst of another fiscal year and another college session. In addition to the record of 1920-21, contained in the first five chapters of this report, a few words regarding present conditions will not be amiss.

Clemson's average sessional enrollment for the past five years is 843. The total enrollment to date (Dec. 10, 1921) despite the hard times, is 994,—the largest in the history of the college. The total for the session will probably reach 1025. With the 1921 Sumer School the enrollment to date is 1295. The distribution of the 994 students enrolled this session, by counties, is as follows: Abbeville 17; Allendale 10; Aiken 15; Anderson 83; Bamberg 12; Barnwell 10; Beaufort 10; Berkeley 7; Calhoun 13; Charleston 44; Cherokee 14; Chester 29; Chesterfield 8; Clarendon 10; Colleton 10; Darlington 17; Dillon 17; Dorchester 5; Edgefield 6; Fairfield 13; Fairfield 13; Florence 16; Georgetown 6; Greenville 56; Greenwood 31; Hampton 16; Horry 15; Jasper 2; Kershaw 9; Lancaster 10; Laurens 22; Lee 3; Lexington 13; Marion 13; Marlboro 18; McCormick 10; Newberry 37; Oconee 53; Orangeburg 38; Pickens 40; Richland 32; Saluda 7; Spartanburg 50; Sumter 17; Union 24; Williamsburg 12; York 39. The distribution by states and foreign countries is as follows: *South Carolina* 939; Alabama 3; Arkansas 1; District of Columbia 3; Florida 5; Georgia 11; Louisiana 1; Maine 1; North Carolina 19; New Jersey 1; New York 1; Oklahoma 3; Tennessee 1; Virginia 1; West Virginia 1; France 1; British West Indies 1; India 1.

Greatly needed is a new dormitory to prevent the present overcrowding occasioned by this large attendance. Clemson's growth and usefulness to South Carolina is being curtailed by a lack of sufficient facilities, especially dormitories and buildings for teaching. With the same overhead organization we could handle 1,500 students as well as 900, and the cost per capita would be greatly reduced. It would be easy

to increase to 1200 students in the next three or five years if we only had the necessary additional dormitories and accompanying facilities for teaching, and a comparatively small increase in our maintenance fund. Our plant for handling even our *present* enrollment is incomplete and in some essential respects inadequate.

The following is an estimate of the cost of additional buildings and operating expense for increased attendance and confirms the recommendations of the experts to the Committee on Economy and consideration that Clemson should have \$100,000 per year for 10 years or \$150,000 for six or seven years.

NEEDED BUILDINGS.

| BUILDING | Present Attendance | 1200 Attendance | 1500 Attendance |
|-----------------------|-----------------------|---------------------|---------------------|
| Laundry ----- | \$ 10,000.00 | \$ 10,000.00 | \$ 10,000.00 |
| H. L. & W. Additions | 25,000.00 | 50,000.00 | 65,000.00 |
| Hospital ----- | 50,000.00 | 50,000.00 | 50,000.00 |
| Gymnasium ----- | 125,000.00 | 125,000.00 | 125,000.00 |
| Live Stock Pavillion | 10,000.00 | 10,000.00 | 10,000.00 |
| Dormitories ----- | 75,000.00 (1) | 150,000.00 (2) | 225,000.00 (3) |
| Library ----- | | 50,000.00 | 50,000.00 |
| Physics & Elec. Bldg. | | 75,000.00 | 75,000.00 |
| Shop Building ---- | | | 30,000.00 |
| Chemistry Building | | 1,000.00 | 30,000.00 |
| Textile Addition -- | | 1,000.00 | 50,000.00 |
| Ent. & Hort. Bldg.- | | 50,000.00 | 50,000.00 |
| Research Greenhouse | | 5,000.00 | 5,000.00 |
| Agri. Hall Addition- | | | 50,000.00 |
| Addition to Chapel-- | | 25,000.00 | 25,000.00 |
| Addition to Mess Hall | | 10,000.00 | 10,000.00 |
| TOTALS ----- | \$295,000.00 | \$612,000.00 | \$860,000.00 |
| Increased Equipment | | 28,850.00 | 42,300.00 |
| | \$295,000.00 | \$640,850.00 | \$902,300.00 |

INCREASED COLLEGIATE OPERATING COST

| | Total Operating Costs | Per Capita Cost. |
|---------------------------------|--------------------------|---------------------|
| For present attendance of 900-- | \$296,935.09 | \$329.93 |
| For an attendance of 1200----- | 332,865.09 | 277.39 |
| For an attendance of 1500 ---- | 347,685.09 | 231.12 |

THE FINANCIAL PROSPECT.

TOTAL ESTIMATED COSTS-----\$400,824.73

ESTIMATED RESERVES FOR FISCAL YEAR

1922-23

To meet the above costs the following funds are available:

| | | |
|----|--|--------------|
| 1. | Interest on Clemson Bequest ----- | \$ 3,512.36 |
| 2. | Interest on Land Script ----- | 5,754.00 |
| 3. | Morrill & Nelson Funds (U. S.) ----- | 25,000.00 |
| 4. | Estimated Tuition ----- | 13,000.00 |
| 5. | Estimated Miscellaneous receipts ----- | 30,000.00 |
| | | <hr/> |
| | | \$ 77,266.36 |
| 6. | Estimated Fertilizer Tax ----- | 150,000.00 |
| 7. | Estimated Balance carried forward July 1, 1922 | 60,112.73 |
| | TOTAL RESOURCES ----- | \$287,379.09 |
| 9. | ESTIMATED DEFICIT ----- | 113,445.64 |
| | | <hr/> |
| | | \$400,824.73 |
| | | <hr/> |
| | | <hr/> |

The above estimated deficit \$113,445.64 will have to be provided in some way if the continuous normal operation of the college is to be guaranteed for another college year. It is not likely that the fertilizer tax will exceed the \$150,000.00 estimated. It is more likely to go below than above.

The necessary provision can be made by the General Assembly in three ways:

(a) By a direct appropriation of \$113,445.64.

(b) By a guarantee of the fertilizer tax up to a minimum of \$263,445.64 which represents the estimated fertilizer tax of \$150,000.00 plus the estimated deficit of \$113,445.64.

(c) By a borrowing act similar to that of 1921 by which the college was authorized to borrow from the State Treasurer up to \$150,000.00 if necessary.

Explanation of Items of Expenditure:

No. 1. *Salaries*—The gathering together of a college faculty is a labor of years. No amount of money can take the place of the time element involved. During the period of inflation the total increase in our salary account was only about 22

per cent. Since the war college salaries generally have not decreased—in fact, they are still on the up-grade. In technical colleges, such as Clemson, salaries are usually higher than in non-technical colleges because they have to compete with business corporations as well as other colleges. Even so, the average salary at Clemson, \$1794.00, is probably lower than any other State College for men in South Carolina except the negro college at Orangeburg.

The figures below, compiled by the U. S. Bureau of Education in December, 1920, shows the averages of 52 colleges and universities compared with the averages at Clemson. At Clemson no rent-free houses or other perquisites are given. Each officer receives a cash salary and nothing more.

| | Pres. | Deans or Directors | Profs. | Assoc- Profs. | Asst. Profs. | Instr's. |
|--------------------------|--------|-----------------------|--------|------------------|-----------------|----------|
| Average of 52 Colleges | \$8324 | \$4427 | \$3372 | Not given | \$2241 | \$1659 |
| Clemson College Averages | 6000 | 3291 | 2786 | \$2307 | 2038 | 1530 |

The total for salaries at Clemson cannot be reduced without ruinous results.

No. 2 Shop and Laboratory Supplies, etc—A technical college, such as Clemson, consumes steel, iron, wood, etc. in its shops;—chemicals, glassware, etc. in its laboratories;—and labor for janitoring buildings, and in the upkeep of tools and machinery. For instance, steel, iron, coal, coke, etc. in our Foundry Division costs annually \$2450.00. In the Wood Shop the cost of operation is \$1,115.00 annually. The operating cost of the Dairy teaching is \$3,065.00 and the Horticultural teaching \$4,310 00.
teaching \$4,310.00.

These costs, incurred only by a technical college, can neither be avoided nor reduced unless the cost of materials and labor further decline. The college must pay these costs unless we follow the fashion at many colleges and require the students to pay a shop and laboratory fee to cover them.

No. 3. Shop and Laboratory Equipment—Equipment for teaching includes electrical instruments, microscopes, balances, livestock, and a hundred other items to give technical instruction and keep that instruction up to date. To withhold these necessary facilities would be nothing short of a betrayal of trust to students whose money and precious time are being devoted to the pursuit of an education.

No. 4 Public Utilities—While ideally situated so far as city distractions go, Clemson suffers the necessity of having to maintain its own public utilities such as heat, light, and power plant, water works, sewer system, telephone system, 21 miles of dirt road, an extensive campus, a village of nearly 100 houses, and the usual features for law enforcement common to a small village. Our central light, power, and heating plant costs over \$35,000.00 annually to operate;—the upkeep of residences \$11,500.00. These costs are, of course, inescapable and cannot be reduced except as the cost of coal, labor, and materials come down. There seems to be no prospect of further decline during 1922. The addition for machinery is absolutely necessary to insure the continuous operation of the College.

No. 5 Equipment Other Than for Teaching—This item covers the renewal of fences and out-buildings, small additive stock, etc. It includes the many items not coming within the catalog of teaching that are necessary in so large a plant as this, and while the details differ from year to year, the total cannot be materially reduced.

No. 6 Insurance, Office Expenses, Publications, Etc.—Insurance, the travel and subsistence of the trustees during their three or four meetings each year, the expenses of the President's, Registrar's, and Treasurer's offices, the cost of the college catalog, and other college publications make up the total of this item. No saving can be accomplished here.

No. 7. Fertilizer Inspection and Analysis—To conduct efficiently the Fertilizer Inspection and Analysis is a fundamental obligation resting upon the college. The cost varies somewhat depending upon the cost of tags and hooks, the cost of travel, and the pay of inspectors. The figure given is the estimate for the fiscal year 1921-22.

No. 8. Scholarships—The cost of the scholarships, when all filled, is \$22,300.00. Usually there are some scholarships vacant. We are putting the figure at \$20,000.00 which will likely take care of all scholarships filled.

Buildings:

It will be noted that no buildings are included in the above estimate of cost. Altho a dormitory and about \$300,000.00 worth of buildings are actually needed to complete the plant on its present basis of 900 students.

A MATTER OF HISTORY:

The Bargain:

In 1890 the friends of Clemson College in the legislature proposed that if the College were given the fertilizer tax, 25 cents per ton, the Trustees would organize and finance an efficient system of inspection and analysis, and with what balance remained would "*erect and maintain*" an Agricultural College without direct appropriations by the state. This understanding was enacted into law.

History of the Fertilizer Tax:

During the 31 years of this agreement, 1890 to 1921, the fertilizer tax has aggregated \$4,473,430.20 and average of \$144,304.19—how much less than the public imagines! The variation of the tax is shown by the figures of the last ten years, which were as follows:

| | | |
|---------|------------------|--------------|
| 1911-12 | ----- | \$221,000.00 |
| 1912-13 | ----- | 231,500.00 |
| 1913-14 | ----- | 276,000.00 |
| 1914-15 | ----- | 155,859.00 |
| 1915-16 | ----- | 171,018.52 |
| 1916-17 | ----- | 216,432.49 |
| 1917-18 | ----- | 268,721.68 |
| 1918-19 | ----- | 258,477.10 |
| 1919-20 | ----- | 313,472.54 |
| 1920-21 | ----- | 167,505.16 |
| 1921-22 | ----- (probably) | \$150,000.00 |

During the 31 years the cost of analysis and inspection has amounted to \$552,447.52 leaving for the erection and maintenance of the College \$3,920,982.68. Our inventory shows a property value of over two million dollars, and out of the remainder the College has been kept steadily in operation for nearly a third of a century *without appropriation from the state either for buildings or for maintenance.*

Additional Duties:

But this is not the whole picture. From time to time the Legislature has seen fit to place upon the college certain lines of public service not contemplated in the original bargain, and the cost of which has come from that "*balance*" which was pledged to "*erect and maintain*" the college. These additional expenses were as follows:

1. In 1901 an act was passed providing for the work of the State Veterinarian and stipulating that the cost of this work should be paid from the current funds of Clemson College. The total cost of this work has been \$109,983.25.

2. In 1904 the Scholarship Act was passed, and again it was specified that the cost of the scholarships should come from the funds of Clemson College. These scholarships have cost up to June 30th a total of \$276,967.38.

3. In 1912 the work of the Crop Pest Commission was

established with the usual provision as to the payment. It has cost, \$33,637.68.

4. In addition to the public service required by successive acts of the legislature, the Trustees, before the Lever Act was passed, realizing the need for extension service and for carrying on agricultural research work, in other sections of the state expended the following sums:

| | | |
|-------------|---|--------------|
| (a) | For Extension Service ----- | \$127,692.04 |
| (b) | For Branch Experiment Stations -- | 122,738.98 |
| (c) | For Agricultural Research at the College ----- | 30,780.99 |
| (d) | For Miscellaneous Public Service -- | 31,061.99 |
| Total ----- | | \$312,274.87 |

The Trustees might have omitted to enter these lines of public service (a—b—c—and—d) since not required by law to do so, but they realized that there was a needed work to do for the agricultural people of the state which the Agricultural College must render. Sacrifice of buildings and equipment had to be made, but these sacrifices laid a foundation for the splendid structure of public service now financed, as it should be entirely by state and federal appropriations.

But when all is said and done, the total cost of items 1, 2, 3, and 4, which were over and above the original bargain to "erect and maintain" the college, is \$732,863.18, an amount nearly sufficient to meet our building needs and to provide for our natural increase in students during the next three years.

College Growth:

As the average fertilizer tax increased the trustees developed the college in size and diversity, always leaving something for buildings which had to go along with the growth of the college in numbers and educational facilities. However, with the beginning of the war conditions changed. The fertilizer tax fluctuated greatly and costs greatly increased. Not only was there no margin left for buildings and equipment, but costs reached a figure requiring a maximum fertilizer tax to meet operating costs.

Loans:

In January, 1916 the Legislature authorized a loan of \$62,400.00 to protect the college against a condition somewhat similar to the present. In 1919-20, with the largest fertilizer tax on record, this loan with interest was repaid in full.

Again this year, 1921, a loan of \$112,842.11 was negotiated. It is on this loan that the college is at present able to continue its operation.

Legislative Responsibility:

With boll weevil conditions over nearly two-thirds of the state, the chance of the fertilizer tax again becoming an adequate support is exceedingly remote.

As an alternative to closing the college before the end of this session or failing to open its doors in the fall of 1922 the Legislature has a right, and theirs is the responsibility, to say whether or not they will again insure us in some way against a deficiency in the fertilizer tax. As faithful public servants, charged with the responsibility of administering one of the state's largest colleges, a college which represents vocationally 85 per cent of our people, the Board must agree that unless the legislature is given an opportunity to guarantee the continuous operation of the college in the present emergency, either by a guarantee, an appropriation, or another borrowing act, a responsibility and risk must be assumed that it would be impossible to justify.

The state and the college entered into the original bargain in good faith for the *very purpose of giving to Clemson an adequate support independent of legislative appropriations*. Neither the Legislature nor the Board could foresee the conditions that now confront the college. Since these conditions imperil the very purpose for which that bargain was made, it is high time, both in law and in morals, to make known all the facts to the Legislature. The Legislature will recognize, as we do, that it would be indeed a catastrophe to the state if the college were forced to suspend for a time, and our student body and faculty become scattered. Uninsured by legislative protection, such a calamity is possible, even probable, because present agricultural and financial conditions

may reduce the fertilizer tax to the lowest level in recent years—an amount upon which it would be impossible to keep the college goin.

The responsibility rests with the legislature. I am sure it will be sympathetically and wisely met by that honorable body, which whom the Trustees of Clemson College are but partners in a great public service.

Respectfully submitted,

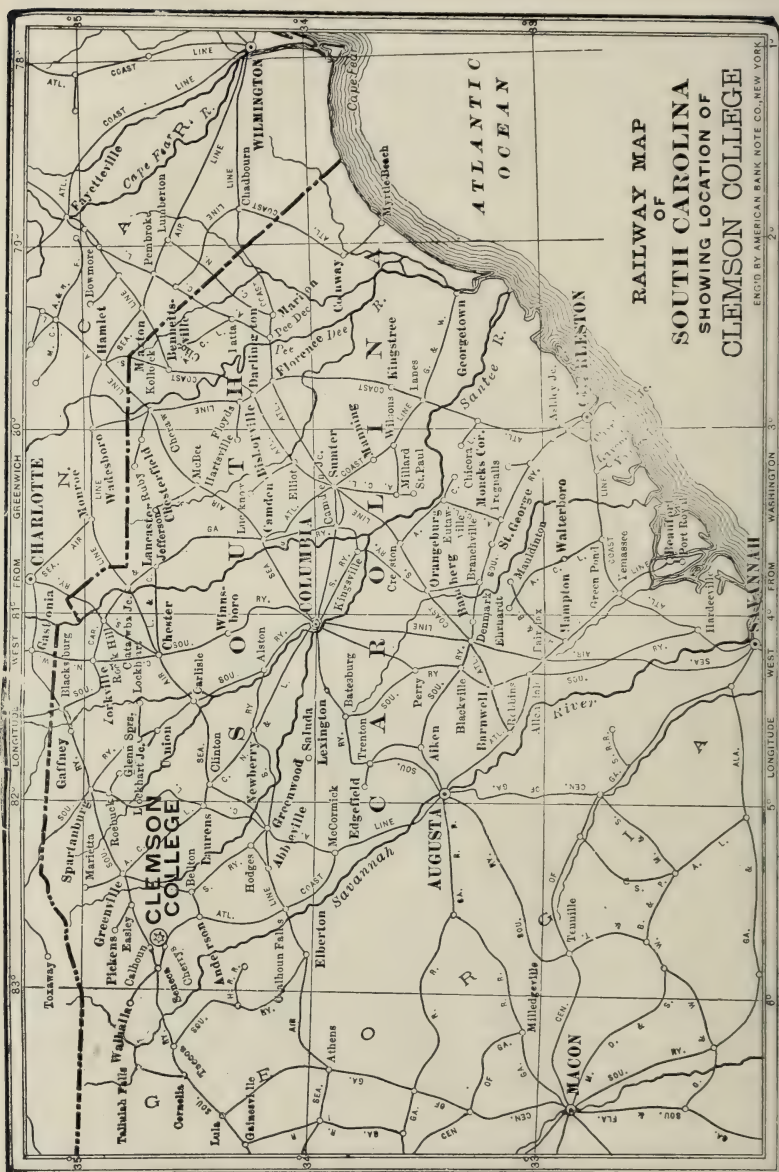
W. M. RIGGS,

President, Clemson Agricultural College.

P. S. As required by law, I present herewith a list of students who pay tuition, those who do not, and those who hold scholarships.

Attached also are reports of the following officers:

1. The Board of Visitors.
2. The Treasurer. --
3. The Auditor.
4. The Director of Experiment Station.
5. The Director of Extension Service.
6. The Secretary of the Fertilizer Board.
7. The Chief Chemist.
8. The State Entomologist and State Pathologist.
9. The State Veterinarian.
10. The Report on Clemson College of the Investigating Staff of Experts to the Legislature Committee on Economy and Consolidation.



CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS.

Abbeville County

Pay Tuition

Cason, S. M., Abbeville.
Coleman, J. F., Abbeville.
Hughs, W. T., Abbeville.
Johnson, J. M., Abbeville.
Moore, W. H., Abbeville.

Free Tuition

Cann, Geo., Abbeville.
Crowther, C. C., Antreville.
Cheatham, J. C., Abbeville.
Hill, A. M., Abbeville.
Wilson, J. W.

Beneficary

Swetenburg, J. R. Abbeville.
Williams, S. A., Abbeville.

Aiken County

Pay Tuition

Burckmeyer, L. A. Jr., North
Augusta.
Eubanks, J. B. Jr., Aiken.
Howard, H. H., Grainiteville.
Murckenfuss, C. H., Aiken.
Murry, R. N., Aiken.
Sawyer, G. W., Monetta.
Sally, N. R., Sally.
Woodward, T. E. P., Aiken.

Free Tuition

Byrd, D. A., Grainiteville.
Cook, L. H., Wagner.
Floyd, A. R., Warrensville.
McNair, M. R., Aiken.
Pearson, J. R., Jr., Graniteville.
Shealy, A. N., Perry.
Sally, J. D., Sally.
Taylor, C. L., Windsor.
Taylor, N. P., Windsor.
Woodward, Wade North Augusta.

Allendale County

Pay Tuition

Stoney, P. D., Allendale.
Youmans, L. W., Fairfax.

Free Tuition

Farmer, Rudolph, Allendale.
Zeigler, C. H., Allendale.
Zeigler, H. S., Allendale.

Anderson County

Pay Tuition

Clatworthy, W. M., Honea Path.
Day, E. S., Pendleton.
Dean, F. F., Anderson.
Gambrell, F. L., Pendleton.
Garrison, F. L., Pendleton.
Griffin, J. K., Belton.
Herron, R. P., Starr.
Jones, J. F., Starr.
Jones, R. W., Starr.
Lyon, J. J., Anderson.
McLees, F. C., Townville.
Moore, J. B., Anderson.
Peppen, J. O., Easley.
Pruitt, B. A., Anderson.
Pruitt, R. S., Anderson.
Pearman, S. N. Starr.
Pettigrew, J. P., Anderson.
Robbins, J. M., Anderson.
Russell, B. A., Auten.

Beneficiary

Sloan, W. A., Anderson.
Stewart, W. M., Anderson.,
Speer, G. M., Anderson,
Thompson, J. T., Anderson.
Webb, J. H., Anderson.
Wilhite, F. F., Anderson.

Free Tuition

Bigby, L. S., Williamston.
Burris, C. A., Anderson.
Burris, W. F., Anderson.
Bowden, A. B., Sandy Springs.
Campbell, R. C., Pendleton.
Cannon, C. B., Honea Path.
Crenshaw, J. C., Pelzer.
Dacus, J. A., Williamston.
Duckworth, B. F. Jr., Anderson.
Dunlap, J. M., Honea Path.
Erskine, J. H., Anderson.
Gaines, J. G., Honea Path.
Garvin, P. M., Pendleton.
Griffin, C. W., Anderson.
Griffin, R. L. Jr., Anderson.
Hall, H. V., Pendleton.
Hammond, W. S., Anderson.
Murphy, T. J., Piedmont.
O'Donald, L. P., Anderson.
Smith, J. J., Starr.
Woodcock, O. B., Pelzer.
Watson, L. F., Anderson.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Webb, T. J., Anderson.
Wigington, J. T., Anderson.

Bamberg County

Pay Tuition
Coker, J. D., Ola.
Kirkland, J. M., Ehrhardt.

Free Tuition
Zeigler, F. M., Denmark.

Barnwell County.

Pay Tuition
Calhoun, C. F., Barnwell.
Hair, A. B., Blackville.
Hair, D. H., Blackville.
Lemon, A. N., Barnwell.
Molair, W. L., Barnwell.
Ray, W. S., Blackville.
Willis, M. A., Williston.

Free Tuition
Armstrong, J. B. Jr., Barnwell.
Dyches, L. B., Blackville.

Beaufort County

Pay Tuition
Keyserling, H. L., Silverstreet
Marscher, A. A., Beaufort.
Peeples, Philips, Bluffton.
Peeples, T. S., Bluffton.
Ramsey, E. D., Beaufort.
Ricker, E. C., Beaufort.
Ricker, G. F., Beaufort.

Free Tuition
Hiers, L. H., Beaufort.
Mann, M. E., Beaufort.

Berkeley County

Pay Tuition
Kirk, R. S., Eastover.
Villeponteau, Cordesville.

Free Tuition
Harvey, O. J., Summerville.

Calhoun County

Pay Tuition
Banks, R. W., St. Matthews.
Pealstine, J. T., St. Matthews.
Stoudemire, L. C., Lone Starr.

Free Tuition
Cauthen, H. W., Fort Motte.
Rast, W. M., St. Matthews.
Summers, D. K., Cameron.

Beneficiary
McGowan, W. D., Cameron.

Charleston County.

Pay Tuition
Bell, S. S., James Island.
Cappleman, G. J. S., Charleston.
Davis, Ralph, Martins Point.
Ferguson, J. L., Charleston.
Geraty, J. W., Youngs Island.
Grice, G. D., Charleston.
Martin, J. V., Charleston.
McGillivray, H. S. Jr., Charleston.
Mikell, I. J., Edisto Island.
Mikell, S. H., Edisto Island.
Perry, F. T., Youngs Island.
Pinckney, J. S., Charleston.
Riley, A. J. Jr., Charleston.
Rittenburg, A. A., Charleston.
Rittenburg, M. R., Charleston.
Royall, J. E., Mt. Pleasant.
Seabrook, T. H., Charleston.
Simmons, T. R., Charleston.

Free Tuition
Bailey, E. M., Martins Point.
Davenport, O. F., Martins Point.
Denaro, J. M., Charleston.
Fraser, R. M., Mt. Pleasant.
Inman, J. K., Charleston.
Jenkins, E. M., Edisto Island.
Kirkley, C. L. Jr., McClellville.
Laury, H. E., Charleston.
Leland, R. E., Monticello.
McCants, J. C., Mt. Pleasant.
Newton, W. H., Charleston.
O'Neil, B., Charleston.
Seabrook, O. F., Martins Point.
Steinmeyer, G. E., Charleston.
Stevenson, C. A. Jr., Charleston.
Venning, R. M., Mt. Pleasant.

Beneficiary
Linder, E. O., Adams Run.
Townsend, J. C., Martins Point.
Whaley, E. C., Martins Point.

Cherokee County

Pay Tuition
Fortenberry, R. O., Gaffney.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Inman, A. K., Wilkinsville.
Jeffries, T. L., Pacolet.
Sarratt, R. C., Gaffney.
Turner, T. P. Gaffney.

Beneficiary

Hartzell, G. W., Cheraw.

Clarendon County

Free Tuition

Allison, J. M., Gaffney.
Brown, J. J., Gaffney.
Black, W. H., Gaffney.
Haas, C. I., Gaffney.
Smith, T. D., Blacksburg.
Tollison, L. C., Gaffney.

Pay Tuition

Bagwell, W. B., Manning.
Davis, W. D., Manning.
Hodge, J. E., Manning.
Oliver, M. B., Greeleyville.
Plowden, E. D., Jordan.
Ridgeway, K. E., Manning.
Rigby, J. H. Jr., Manning.

Chester County

Pay Tuition

Abernathy, W. H., Fort Lawn.
Culp, C. L., Edgemore.
Cornwell, T. D., Chester.
Gaston, J. B., Rodman.
Gwin, M. H., Lewis Tournout.
Hall, E. H., Great Falls.
Ried, J. R. Jr., Richburg.
Reid, W. J. Jr., Richburg.
Shannon, J. R., Blackstock.
Wade, W. M., Lowryville.

Beneficiary

Harvin, J. L., Pinewood.
Mahoney, W. M., Manning.

Colleton County

Pay Tuition

Boynton, C. W., White Hall.

Free Tuition

Durant, C. O., Cottageville.
McGowan, J. L., Ehrhardt.
Sounders, H. M., Marlboro.
Smyly, J. W. Jr., Buffin.

Beneficiary

Willis, H. A., White Hall.

Darlington County

Pay Tuition

Calhoun, C. F., Dovesville.
Conder, H. W., Darlington.
Sumner, J. P., Hartville.
Tillotson, W. E. Jr., Hartsville.

Free Tuition

Anderson, O. W., Darlington.
Auten, J. F., Hartsville.
Butler, C. M., Hartsville.
Banks, W. D., Hartsville.
Boone, S. C., Hartsville.
DeWitt, A., Darlington.
Dunlap, M. T., Hartsville.
DuRant, C. L., Mont Clare.
Hoffmeyer, H. F. L., Florence.
Jordan, E. B., Lamar.
Perritt, L. G., Lamar.
Stuckey, C. C., McBee.
Woodham, B. G., Hartsville.

Beneficiary

Stevenson, R. A., Richburg.
Stevenson, T. C., Richburg.
Stevenson, D. W., Richburg.

Chesterfield County

Pay Tuition

McPherson, D. J. Jr., Cheraw.
Odom, W. H., Chesterfield.

Free Tuition

Knight, H. D., Angelus.
McArn, D. H., Cheraw.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLRRSHIPS—(Continued)

Beneficiary

Ross, J. E., Society Hill.

Dillon County

Pay Tuition

Alford, E. R., Latta.
Atkins, M. T., Latta.
Bethea, T. H., Latta.
Cottingham, Vernon, Clio.
Elliott, J. F., Dillon.
Sherwood, R. Y., Dillon.

Free Tuition

Hamilton, S. S., Dillon.
LeGette, M. A., Latta.
Williams, A. B., Mallory.

Dorchester County

Pay Tuition

Ackerman, T. H., St. George.

Free Tuition

Allen, A. N., Summerville.

Beneficiary

Minus, P. M., St. George.

Edgefield County

Pay Tuition

Thurmond, J. S., Edgefield.
Timmerman, R. C., Edgefield.

Free Tuition.

Mays, F. L., Edgefield.
Spearman, J. H. Edgefield.

Fairfield County

Pay Tuition

Jones, M. L., Longtown.
McMeekin, F. R., Monticello.
McMeekin, S. C., Jenkinsvill.

Free Tuition.

Cathcart, S. L., Winnsboro.
Dunlap, W. M., Winnsboro.
Harden, W. R., Winnsboro.
McMeekin, T. T., Monticello.
McMeekin, T. R., Jenkinsville.

Beneficiary

Harvey, S. A., Woodward.

Florence County

Pay Tuition

Benton, L. L. Timmons ville.
Evans, M. A., Tampico.
Huggins, Marion, Timmons ville.
Hinson, H. L., Scranton.
Matthews, S. C. Scranton.

Free Tuition.

Divine, H. W., Florence.
Garvin, J. F., Timmons ville.
Johnston, R. H., Florence.

Beneficiary

Hinson, I. L., Scranton.
Shands, R. G., Ebenezer.

Georgetown County

Pay Tuition

Jones D. B., Georgetown.
Rhems, C. F., Rhem.

Free Tuition.

Bailey, R. W., Andrews.
Doar, L. H., Georgetown.
Rasor, J. R., Georgetown.

Greenwood County

Pay Tuition

Algray, W. F., Donalds.
Cothran, T. W., Greenwood.
Graham, R. M., Hodges.
Rasor, A. B., Donalds.
Rodgers, S. A., Callison.
Shirly, L. R., Greenwood.
Snead, C. B., Greenwood.
Turnipseed, B. R., Greenwood.
Warner, M. R., Greenwood.

Free Tuition.

Brissie, M. R., Hodges.
Cothran, E., Greenwood.
Cothran, F. H., Greenwood.
Durst, J. W., Greenwood.
Garret, W. F., Greenwood.
Miller, W. H., Greenwood.
Stribling, R. S., Ware Shoals.
Warner, J. D., Greenwood.

Beneficiary

Martin, F. G. Jr., Ninety Six.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLRRSHIPS—(Continued)

Roberts, W. J., Ninety Six.
Woodle, H. A., Greenwood.
Young, C. F. Jr., Greenwood.

Greenville County

Pay Tuition

Anderson, A. J., Greenville.
Armstrong, H., Fountain Inn.
Bryan, G. T., Jr., Greenville.
Ballenger, W. M., Jr. Greer.
Ballentine, W. L., Greenville.
Cunningham, J. L., Greer.
Davis, E. P., Jr., Greenville.
Ellis, W. J., Greenville.
Farrell, J. G., Greenville.
Fayssoux, F. S., Greenville.
Gilfillin, J. M., Greenville.
Goldsmith, W. M., Greenville.
Hendrix, W. B., Greenville.
LaBoone, F. P., Taylor.
Leach, M. R., Greenville.
Marshall, D. H., Greenville.
Morgan, B. A., Greenville.
Norris, J. A., Piedmont.
Reese, M. R., Greer.
Smith, C. E., Greenville.
Smith, J. S., Greenville.
Stallworth, W. H., Gaines.

Free Tuition.

Baumann, J. H., Greenville.
Berry, J. B., Greenville.
Carr, D. L., Piedmont.
Chandler, J. E., Pelzer.
Cooper, T. B., Greenville.
Dillard, R. L., Greer.
Duckett, L. L., Fountain Inn.
Gilmer, G. G., Greenville.
Givens, J. W., Fountain Inn.
Gowen, A. G., Jr., Greenville.
Howie, J. L., Greenville.
Hellams, J. I., Travelers Rest.
Hicks, M. L., Greenville.
Howell, A. N., Greer.
Lynn, M. H., Taylors.
Taylor, F. W., Fountain Inn.
Wade, J. L., Greenville.

Beneficiary

Miller, C. L., Greenville.
McCravy, C. L., Greenville.

Horry County

Pay Tuition

Derham, E. M., Green Sea.
Fowler, F. J., Loris.
Williams, L. P., Bucksville.

Free Tuition.

Altman, H. S. Galivants Ferry.
Dorman, J. K., Conway.
Dusenbury, C. C., Toddville.

Beneficiary

Graham, J. P. Jr., Conway.

Hampton County

Pay Tuition

Causey, M. O., Furman.
Carter, R. E., Varnsville.
Gooding, P. H., Hampton.
Mixon, A. B., Furman.
Peeples, M. L., Scotia.
Varn, O. F., Varnsville.

Free Tuition

Bowers, H. A., Hampton.
Lawton, A. S., Garnett.
Lawton, R. E., Garnett.
Lightsey, L. M., Hampton.
Long, G. B., Garnett.
Mason, W. O., Estell.
Miley, L., Brunson.
Rentz, N. G., Varnsville.
Riley, G. M., Jr., Garnett.
Thomas, F. E., Hampton.
Wiggins, E. C., Garnett.
Wiggins, J. E. Jr., Estell.

Jasper County

Free Tuition

Langford, W. F., Gillisonville.

Beneficiary

Fripp, W. P., Tillman.
Parnell, H. N., Gillisonville.

Kershaw County

Pay Tuition

Lenoir, T. W., Camden.
Trusdale,, J. P., Kershaw.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Free Tuition

Nettles, H. E., Lugoff.

Beneficiary

Richards, J. P., Liberty Hill.

Trotter, J. W., Camden.

Lancaster County

Pay Tuition

Bailes, J. P., Fort Mill.

Culp, T. F., Lancaster.

Cook, W. C. Kershaw.

Porter, H. A., Lancaster.

Williams, E. B., Kershaw.

Free Tuition

Timmons, E. D., Heath Springs.

Timmons, L. C., Heath Springs

Beneficiary

Harris, O. P., Fort Mill.

King, J. M., Lancaster.

Patterson, C. E., Fort Mill.

Laurens County

Pay Tuition

Albright, G. C., Laurens.

Cannon, A. M., Mountville.

Chandler, E. S., Clinton.

Clapp, W. J., Clinton.

Copeland, E. W. Jr., Laurens.

Davis, W. G., Clinton.

Davis, T. W., Clinton.

Dunlap, J. H., Laurens.

Eastenby, A. H., Laurens.

Fuller, E. P., Laurens.

Hunter, H. A., Clinton.

Wood, H. H., Laurens.

Free Tuition

Armstrong, F. E., Laurens.

Crisp, C. A., Laurens.

Culbertson, J. A. Ware Shoals.

Epps, A. R., Lake City.

Griffin, W. F., Cross Hill.

Knight, A. J., Ware Shoals.

Knight, O. J., Ware Shoals.

Langston, J. L., Laurens.

Owens, J. C., Laurens.

Templeton, J. B., Clinton.

Wallace, N. L., Bryson.

Wallace, T. P., Bryson.

Woodside, H. F., Laurens.

Wofford, G. C., Laurens.

Lee County

Pay Tuition

Moore, W. E., Bishopville.

Williams, C. E., Pinehurst.

Free Tuition

Fields, J. N., Lamar.

Lexington County

Free Tuition

Addy, C. S., Leesville.

Dowling, J. A., Swansea.

Fink, B. L., Batesburg.

Hartley, R. L., Batesburg.

Hiller, R. E., Chapin.

Beneficiary

Miller, J. C., Lexington.

Marion County

Pay Tuition

Mace, J. C., Marion.

Owens, J. B., Marion.

Solomon, L. Marion.

Free Tuition

Cartwright, A. K., Marion.

Driggers, B. F., Sellers.

Wood, H. W., Mullin.,

Mace, S. N., Marion.

Owens, C. A., Marion.

Beneficiary

Mace, K. M., Marion.

Marlboro County

Pay Tuition

Crossland, J. E., Bennettsville.

David, C. C., Bennettsville.

Fletcher, E. G., McColl.

Fletcher, H. W., McColl.

McLaurin, E. B., McColl.

McLaurin, J. F., McColl.

Sherrill, L. H., Bennettsville.

Smith, A. L., Bennettsville.

Smith, D. R., Cllo.

Smith, O. L., Bennettsville.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Wright, L. C., Clio.
Welch, W. F., Dillon.

Free Tuition

Atkinson, C. N., Blenheim.
Crosland, T. M., Bennettsville.
Fletcher, L. A., Bennettsville.
Odom, G. F., McColl.
Smoot, B. F., McColl.

Beneficiary

Howell, L. M., Bennettsville.

McCormick County

Pay Tuition

Brown., N. G., McCormick.
Britt, W. E., McCormick.
Dorn, J. B., McCormick.
Talbert, J. B., McCormick.

Free Tuition

Bussey, J. C., Parksville.
Covin, J. O., Willington.
Sheppard, J. L., McCormick.

Beneficiary

Roberts, J. M., Plum Branch.

Newberry County

Pay Tuition

Boozar, L. Prosperity.
Coleman, D., Chappells.
Coleman, J. V., Silverstreet.
Epting, C. V., Peak.
Fridy, R. M., Newberry.
Huffman, W. C., Little Mountain.
Hipp, R., Pomaria.
Singley, H. S., Prosperity.
Smith, W. B., Kinards.
Wallace, F. H., Kinards.
Wertz, R. B., Newberry.
Wilbur, W. W., Newberry.

Free Tuition

Aull, J. C., Pomaria.
Bedenbaugh, J. W., Prosperity.
Boozar, W. M., Newberry.
Epting, J. C., Little Mountain.
Pugh, R. W., Prosperity.
Pugh, W. C., Prosperity.
Sease, E. C., Prosperity.
Spearman, W. W., Newberry.
Wheeler, W. C., Little Mountain.

Beneficiary

Hunter, J. H., Prosperity.
Mills, O. B., Prosperity.

Oconee County

Beneficiary

Shiver, J. C., Clemson College.

Pay Tuition

Alexander, J. H., Walhalla.
Anderson, W. T., Seneca.
Ansel, J. A., Walhalla.
Davis, C. R., Fair Play.
Ellison, C. H., Seneca.
Hunter, S. C., Westminster.
Martin, R. S., Clemson College.
Martin, S. M., Clemson College.
McMahan, J., Richland.
McPhail, W. H., Townsville.
Mills, W. H. Jr., Clemson College.
Moss, J. H., Walhalla.
Martin M., Seneca.
Newman, A. S., Clemson College.
Stribling, W. J., Walhalla.
Verner, J. V., Richland.

Free Tuition

Coarsey, R. W., Clemson College.
Cobb, B. C., Walhalla.
Dickson, W. P., Seneca.
Dorn, W. L., Westminster.
Harrison, G. A., Walhalla.
Martin, L. I., Westminster.
Merck, W. L., Calhoun.
Mulkey, H. B., Westminster.
Schroder, J. H., Walhalla.
Shiver, N. C., Clemson College.
St. John, N. P., Clemson College.
Todd, J. N., Walhalla.
Wilbanks, W. C., Clemson College.

Orangeburg County

Pay Tuition

Dukes, W. A., Branchville.
Grambling, H. S., Orangeburg.
Knotts, W. F., North.
Livingston, A. R., North.
Mackey, M. S., Orangeburg.
Miley, J. N., Branchville.
Robinson, E. E., Rowesville.
Savage, E. B., Eutawville.
Simmons, K. B., Rowesville.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Simmons, T. D., Rowesville.
 Sally, H. B., Sally.
 Smook, L. G., Cope.
 Till, E. C., Orangeburg.
 Till, N. R., Orangeburg.
 Tindal, L. N., Vance.
 Winsen, H. F., Bowman.
 Weeks, J. L., Orangeburg.
 Wertz, N. W., Orangeburg.

Free Tuition

Evans, T. M., Ellore.
 Fogle, E. A., Orangeburg.
 Gibson, J. W., Cordovas.
 Gilmer, W. D., Holly Hill.
 Hayden, O. L., Orangeburg.
 Koopmann, J. J., Eutawville.
 Smith, T. S., Springfield.
 Thompson, E. A., Reevesville.
 Till, J. F., Orangeburg.

Free Tuition

Traxler, D. W., Bowman.
 Vincent, C. E., Orangeburg.
 Wainstone, O. F., Rowesville.
 Zeigler, T. J., Cope.

Beneficiary

Rickenbaker, T. D., Bowman.

Pickens County

Pay Tuition

Gaines, H. I., Central.
 Gaines, L. A., Central.
 Hendricks, Easley.
 Jones, B. K., Easley.
 Kay, A. E., Easley.
 McHugh, J. B., Clemson College.
 Robertson, B. F., Jr., Clemson College.

Smith, T. W., Pickens.
 Tate, R. W., Norris.
 Walker, H. P., Easley.
 Wyatt, W. F., Easley.
 Williams, Ned Easley.

Free Tuition

Arnold, L. W., Central.
 Ellison, M. C., Easley.
 Freeman, J. F., Pickens.
 Freeman, J. L., Pickens.
 Mathews, D. T., Pickens.
 Middleton, W. S., Clemson College.
 Mathews, Vance, Clemson College.

Robertson, L. H., Pickens.
 Schilletter, J. C., Clemson College.
 Smith, C. R., Liberty.
 Watkins, W. W., Easley.
 Wertz, J. B., Clemson College.
 Yongue, C., Pickens.
 Sutherland, J. L., Pickens.

Richland County

Pay Tuition

Bates, H. G., Eastover,
 Chappell, L. C., Jr., Yykesville.
 Coleman, E. B., Eastover.
 Coleman, R. L., Hopkins.
 Coles, A. B., Columbia.
 Hollowell, J. G., Columbia.
 Hollowell, J. R., Columbia.
 Jones, H. J., Congaree.
 Livingston, D. F., Columbia.
 Price, G. D., Eastover.
 Rawlinson, G. S., Eastover.
 Sams, J. H. Jr., Columbia.

Free Tuition

Brown, B. S., Blythewood.
 Burton, C. C., Inman.
 Childs, L. H., Columbia.
 Dominick, H. B., Columbia.
 Eleazer, L. H., Chapin.
 Guy, B. B., Columbia.
 Killian, J. M., Columbia.
 Lachicotte, L. H., Columbia.
 Madden, L. E., Columbia.
 Maxwell, R. E., Columbia.
 Schumpert, F. E., Columbia.
 Shelamer, A. M., Columbia.
 Schoolbred, Augustus, Columbia.

Beneficiary

Hoffman, M. B., Blythewood.
 Langford, G. S., Blythewood.
 Rawl, E. H., Columbia.

Saluda County

Pay Tuition

Goff, W. E., Leesville.
 Waters, P. B., Saluda.
 Wise, P. N., Batesburg.

Free Tuition

Bodie, W. J., Batesburg.
 Kempson, J. M., Silverstreet.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Merchant, V. E., Chappells.

Turbyfill, W. G., Spartanburg.

Quattlebaum, C. A., Ridge Springs

Webber, C. E., Spartanburg.

Williams, R. N., Glenn Springs.

Beneficiary

Zimmerman, D. W., Chappells.

Free Tuition

Bishop, R. T., Woodruff.

Cannon, W. S., Spartanburg.

Carver, W. A., Spartanburg.

Ezell, B. D., Cherokee.

Freeman, E. J. Jr., Spartanburg

Freeman, R. A., Spartanburg.

Gentry, L. M., Landrum.

Halstead, R. T., Spartanburg.

Harris, J. E., Spartanburg.

Hendrix, T. G., Duncan.

Morgan, C. S., Welford.

Shands, E. H., Campobello.

Watkins, E. F., Spartanburg.

Wilkins, J. M., Cowpens.

Wilkins, Rowland, Cowpens.

Sumter County

Pay Tuition

Dwight, R. C., Wedgefield.

Emmanuel, E. H., Borden.

Ryan, F. R., Wedgefield.

Ryan, M. S., Wedgefield.

Sanders, C. W., Hagood.

Wells, W. R., Sumter.

Free Tuition

Bass, F. J., Mayesville.

Bradley, N. M., Sumter.

Cain, O. W., Sumter.

Haynsworth, J. R., Jr. Sumter.

Mays, T. P., Mayesville.

Mellette, R. S., Sumter.

Mellette, W. W., Sumter.

McGrew, C. J., Sumter.

Parker, J. M., Dalzell.

Randle, M. B., Sumter.

Truluck, J. P., Motbridge.

Beneficiary

Hines, W. E., Spartanburg.

Morgan, T. W. Welford.

Thorne, T. F., Landrum.

Union County

Pay Tuition

Betsell, J. L., Union.

Haas, H. P., Union.

Hollingsworth, P. H., Union

Howell, R. E., Buffalo.

Jeffries, E. E., Union.

Littlejohn, B. C., Jonesville.

Sarter, C. C., Union.

Spartanburg County

Baiten, L. R., Tucupaw.

Dean, G. B., Spartanburg.

Dye, W. E., Spartanburg.

Fitzgerald, E. B., Spartanburg.

Foster, H. M., Roebuck.

Fuller, Roy Pacolet.

Gray, W. H., Woodruff.

Hagood, W. M., Spartanburg.

Heffner, L. B., Spartanburg.

Johnson, H. L., Spartanburg.

Kirkpartick, J. W., Pacolet.

McClimon, W. L., Greer.

Moore, W. A., Cowpens.

Patterson, J. T., Woodruff.

Pearson, A. S., Woodruff.

Porter, L. W. Spartanburg.

Scruggs, J. L., Spartanburg.

Sams, M. W., Spartanburg.

Smith, A. P Pauline.

Free Tuition

Chambers, J. A., Union.

Fowler, W. M., Jonesville.

Rice, S. C., Union.

Smith, W. R., Union.

Williams, E. W., Jonesville.

Beneficiary

Murphy, W. B., Union.

Thornton, M. H., Lockhart.

Williamsburg County.

Pay Tuition

Boswell, C. W. Jr., Salters.

Davis, I. E., Salters Depot.

Gambel, J. P., Heinman.

O'Bryan, M. B., Heinman.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Free Tuition

Steele, H., Kingstree.

Beneficiary

Burgess, J. K., Kingstree.

Scott, W. B., Kingstree.

York County

Pay Tuition

Brice, R. W., York.

Campbell, S. W., Tirzah.

Farris, T. M., Fort Mill.

Kinard, J. P., Jr., Rock Hill.

Logan, F. R., York.

Love, W. A., McConnellsville.

Plexico, J. C., Rock Hill.

Quinn, J. W. Jr. York.

Stewart, J. M., Rock Hill.

Wray, A. F., York.

Whisonant, W. W., York.

Free Tuition

Byars, W. B., Rock Hill.

Cook, J. M., Fort Mill.

Erwin, R. M., Fort Mill.

Erwin, W. J., Fort Mill.

Feemster, W. B., McConnellsville.

Foster, E. G., McConnessville.

Fudge, B. R., Rock Hill.

Garrison, C. C., Fort Mill.

Gettys, E. F., York.

Nichols, J. L. Rock Hill.

Smith, J. R., Jr. York.

Smarr, R. G., Sharon.

Walsh, J. N., York.

Young, L. R., Rock Hill.

Beneficiary

Glenn, W. J., York.

Grien, W. H., Fort Mill.

Hays, S. J., Rock Hill.

Horton, L. F., Sharon.

Plexico, J. C., York.

Roberson, H. E. Sharon.

Non Residents.

Calhoun, P. Atlanta, Ga.

Colbert, W. C., Ardmore, Okla.

Dunham, F. E., Stewart, Fla.

Graham, G. B., Charlotte, N. C. Smyth, E. A., Hendersonville, N. C.

Hadlow, F. N., Jacksonville, Fla. Springs, J. A., Hickory, N. C.

Hardlaw, F. N., Jacksonville, Fla. Tate, H. F., Union Mills, N. C.

Hadlow, R. H. Jacksonville, Fla. Taylor, F. E., Macon, Ga.

Henriquez, C. S., Jamaica, B. W. I. Taylor, T., Savannah, Ga.

Jones, W. F., Selma, Ala. Teal, F. T., Wadesboro, N. C.

Jones, W. R., Selma, Ala. Thornton, B. G., Carrollton, Ga.

Lucas, T. T., Charlotte, N. C. Vogel, T. R., Jr. Washington, D. C.

Melson, H. R., Hogansville, Ga. Willis, Chas. E., LaGrange, Ga.

McDonald, W. S., Gainesville, Fla. Williamson, J. W., Villa Rica, Ga.

Parker, E. G., Grover, N. C. Wood, T. C., Washington, D. C.

Redfern, W. M., Wadesboro, N. C. Williams, J. S., Washington, D. C.

Roberts, O. A., Walters, Okla. Yeomans, L., Dawson, Ga.

Roberts, L. R., Rebecca, Ga. Yeomans, M. S., Dawson, Ga.

Report of Board of Visitors

GENERAL COMMENT

1. The Board of Visitors appointed for the current year conforming to the laws of the State met at Clemson College on May 4th 1921. During the greater part of the two days, we made a careful inspection of the physical property and studied as the limited time would permit, all phases of the organization and life of the institution.

2. Our visit had been anticipated by the administrative officers with a carefully planned schedule of appointments which alone made it possible, within the limited time at our disposal, to gather facts and impressions as a basis for this report. We wish to record here our warmest thanks for the courtesies shown us by President Riggs, Departmental heads, Members of the Faculty and others. No detail had been omitted that would facilitate the work of the Board, or add to our comfort.

3. Our itinerary included a visit to all the Departments of the college. The head of each Department directed and assisted us in the inspection of his work, and in a most interesting way explained to us the contribution his department was endeavoring to make to the worth and efficiency of the institution. Without exception, these men demonstrated intelligent grasp of the demands of the institution upon them and evidenced loyalty and enthusiasm that was most gratifying to your Board of Visitors. We wish to make special mention of the impression that was made upon us by the co-ordination of effort between the departments, without which the College could never fulfill the hopes and expectations of its honored founders and the people of the Commonwealth whom it serves.

4. We shall not follow the precedent of reporting in any detail upon our inspection of all the various departments; suffice it to say that your Board gained the impression that the funds of the institution assigned to the various departments were not only economically, but well and wisely expended.

5. We do wish to mention our inspection and study of the boarding arrangements and business administration of the institution. All of the departments deserve favorable comment. We choose these two departments for the reason that in our judgment the efficiency of the institution in its work for the State, and

especially in its work for the young manhood of the State, rests in a large way upon the manner in which these two departments are administered.

6. In charge of a student committee and unaccompanied by any of the officers of the institution, we visited many students in their rooms and thoroughly inspected the cuisine. It was pleasing to us and a splendid commendation of the management to have the students say, seemingly without reservation, that every attention was being given to their comfort and health, and that the food throughout the session has been wholesome, well-prepared and appetizing. The Board took a meal with the students in their dining hall and passed unanimous judgment of pleasure and satisfaction at the meal, which we were assured by the management and students was representative of meals served from day to day.

7. Perhaps the Board gave more time to the business administration of the College, including methods of distribution of funds, systems of accounting, etc., than to any other department of the institution. President Riggs, first by means of charts and schedules gave us the foundation for a clear understanding of a carefully evolved system of inter-departmental accounting. Later, we were carried to the Book-keeping Department and shown the system by inspection of the books of the current year. The Board of Visitors wishes to congratulate the Board of Trustees upon the installation of a system of accounting which is both comprehensive and thoroughly modern, according to the best system of bookkeeping. It is a safe-guard against waste of the funds of the institution as a whole and a guarantee of economical and intelligent departmental administration. No other phase of the work of the institution made a happier impression on your Board of Visitors.

RECOMMENDATIONS

1. The financial experience of Clemson College this year leads the Board of Visitors to feel that the most important matter before us is a search for a plan that would stabilize the finances of the institution.

Wise and far-seeing as the founders were, they could not foretell the effect upon the institution of a variable income. In making available for Clemson College the receipts from the Fertilizer Tax, they doubtless thought they were making ample provisions for the institution for all time. They could not know the extent to which the College has already expanded, nor could they foretell the demands that would be made upon the institution from year to year.

It is the firm conviction of the Board of Visitors that Clemson College cannot meet the needs of its constituency unless the Trus-

tees and the Executive officers of the institution are allowed to prepare from year to year a budget of expenses with reasonable assurance that the funds, that will be actually needed for any fiscal year, will be provided.

It is a dangerous public policy which allows it to become possible for one of the greatest institutions of the State to find its annual income suddenly decreased from forty to fifty per cent, by conditions over which it has no control as was the experience of Clemson College this year. Such policy is not only unfair to the Executive Officers of the Institution, but necessarily affects the efficiency of the Institution and retards its progress.

After carefully considering possible solutions, the Board of Visitors has decided that the most feasible and the least objectionable plan is to retain the Fertilizer Tax as it is at present, and then enter into a compact with the people of the State thru the Legislature, to the effect that if from year to year, the Legislature will provide sufficient funds to meet the needs of the College work of the institution, including inspection and analysis, then if, during any fiscal year, the receipts from the Fertilizer Tax should be in excess of an economical budget for the year, then such excess will be returned to the State Treasury or will be held subject to the disposition of the Legislature.

The Board of Visitors feel that such a compact should be willingly entered into by the people of the State and that the support of the College under the plan ought to be not merely sufficient, but liberal. Your Board is not prepared to name an amount that is necessary for the next fiscal year. The amount required from time to time will depend upon the growth of the institution. The amount will have to be ascertained from year to year. It should be an easy matter to meet the wishes of the Legislature as to when and how the budget should be prepared for the expenses of any fiscal year. There could be no objection to the Legislature in its own way placing a safe-guard around the Annual expenses of the institution. We earnestly hope that some plan will be devised that will enable President Riggs and the other administrative officers of the institution to know each year in advance just what funds will be available. No one thing could be done which would in our opinion, make a larger contribution to the efficiency of the institution.

2. While the Board of Trustees realize that there will always be objections,—some well-founded,—to the military system of student government; still our observation of the work of the institution leads us to believe that any change in this respect would be inadvisable. We were impressed with the orderly procedure of the cadets and the general expedition and efficiency with which the work of the College was carried along.

3. The Governor of the State has suggested that buildings for public institutions should be financed by Bond Issues and not be a burden upon the current budget. Your Board of Visitors gives its hearty approval to this plan and hopes that every support will be given Gov. Cooper in presenting this plan to the Legislature. The needs of the institution in this respect have been brought to your attention from time to time.

CONCLUSION

1. In conclusion, the Board wishes to say that it found pleasure in the assigned work. We commend you for your liberal policies and wise administration; we commend unreservedly President Riggs for his energetic, untiring and able services as chief executive officer; we commend the College to its constituency as an outstanding influence towards realizing all that is noble and worthy in our highest hopes and ambitions for the Commonwealth of South Carolina.

Respectfully submitted,

John R. Hart, Chairman.

R. B. Cunningham

John W. McKay.

J. B. Parks.

B. E. Geer Secretary

Report of the Treasurer For the Fiscal Year July 1, 1920, to June 30, 1921

To The Finance Committee of the Board of Trustees

(through the President):

Gentlemen:

As Secretary-Treasurer of the Clemson Agricultural College, I beg to submit the following report of all funds received and disbursed by me for the fiscal year ending June 30th, 1921.

Examination of this report will reveal that out of the total of \$1,513,349.74 handled by this office, the college received \$338,694.14, out of which the sum of \$50,652.52 was used to defray the cost of scholarships, fertilizer inspection and analysis and other public service projects, leaving a balance of \$288,041.62 for collegiate work.

Owing to a shrinkage of \$145,967.38 in the fertilizer tax over that of the previous year, it was necessary to transfer the sum of \$77,203.68 from the reserve fund to carry out the budget for the period covered by this report.

Respectfully submitted,

S. W. EVANS,
Secretary-Treasurer.

COLLEGE ACCOUNT

RECEIPTS

| | |
|---|---------------|
| Privilege Fertilizer Inspection Tax | \$ 167,505.16 |
| Interest on Clemson Bequest | 3,512.36 |
| Interest on Landscip | 5,754.00 |
| Morrill and Nelson Fund (U. S.) | 25,000.00 |
| Tuition from Cadets | 13,486.40 |
| Sales, Interest, Rents, etc. | 46,232.54 |
| From Reserve Fund | 77,203.68 |
| | \$ 338,695.14 |

EXPENDITURES

| | |
|--|---------------|
| Scholarships and Advertisements | \$ 12,749.10 |
| Fertilizer Inspection and Analysis | 29,952.51 |
| Miscellaneous Public Service | 2,483.36 |
| South Carolina Agricultural Experiment Station | 5,467.55 |
| Salaries, Labor, Coal, Materials, etc. | 253,910.34 |
| Equipment for Teaching | 7,886.46 |
| Improvements and Addition to Plant | 26,244.82 |
| | <hr/> |
| | \$ 338,694.14 |

HATCH AND ADAMS FUND (U. S.)**S. C. Agricultural Experiment Station.****RECEIPTS**

| | |
|--------------------------------------|--------------|
| Balance on hand July 1st, 1920 | \$ 2,219.43 |
| Adams Fund | 15,000.00 |
| Hatch Fund | 15,000.00 |
| Sales | 2,481.28 |
| Over-draft June 30th, 1921 | 421.85 |
| | <hr/> |
| | \$ 35,122.56 |

EXPENDITURES

| | |
|--|--------------|
| Salaries | \$ 18,964.08 |
| Labor | 6,051.11 |
| Publications | 470.62 |
| Postage and Stationery | 1,045.63 |
| Freight and Express | 496.83 |
| Heat, Light, Water and Power | 279.31 |
| Chemicals and Laboratory Supplies | 824.47 |
| Seed, Plants and Sundry Supplies | 1,434.64 |
| Fertilizers | 455.15 |
| Feed Stuff | 1,887.49 |
| Library | 654.87 |
| Tools, Machinery, etc. | 894.22 |
| Furniture and Fixtures | 461.55 |
| Scientific Apparatus and Specimens | 480.89 |
| Live Stock | 100.00 |
| Traveling Expenses | 255.04 |
| Buildings and Land | 366.66 |
| | <hr/> |
| | \$ 35,122.56 |

SMITH-LEVER FUND (U. S.)

Extension Service.

RECEIPTS

| | |
|-----------------------------|---------------|
| Federal Appropriation | \$ 130,297.88 |
| State Appropriation | 81,070.00 |

\$ 211,367.88

EXPENDITURES

| | |
|--|---------------|
| Salaries | \$ 148,867.68 |
| Labor | 9.00 |
| Publications | 4,581.54 |
| Postage, Telegraph, Freight, etc. | 2,792.95 |
| Stationery and Small Printing | 1,119.22 |
| Heat, Light and Water | 606.80 |
| Supplies | 920.37 |
| Library | 92.06 |
| Tools, Machinery, etc. | 63.77 |
| Furniture and Fixtures | 3,437.72 |
| Scientific Apparatus | 180.53 |
| Traveling Expenses | 48,279.62 |
| Contingent and Incidental Expenses | 416.62 |

\$ 211,367.88

STATE APPROPRIATIONS.

APPROPRIATIONS

| | |
|----------------------------------|--------------|
| Agricultural Research | \$ 35,683.96 |
| Live Stock Sanitary Work | 38,435.31 |
| Tick Eradication | 19,973.19 |
| Crop Pest and Disease Work | 11,318.34 |

\$ 105,410.80

EXPENDITURES

| | |
|----------------------------------|--------------|
| Agricultural Research | \$ 35,683.96 |
| Live Stock Sanitary Work | 38,435.31 |
| Tick Eradication | 19,973.19 |
| Crop Pest and Disease Work | 11,318.34 |

\$ 105,410.80

Note: The above for fiscal year July 1, '20 to June 30, '21.

REINVESTMENT FUNDS.

RECEIPTS

| | |
|------------------------------------|---------------|
| Balance on hand July 1, 1920 | \$ 132,338.14 |
| Receipts for fiscal year | 352,876.13 |

\$ 485,214.27

EXPENDITURES

| | |
|---|---------------|
| Animal Husbandry | \$ 12,733.98 |
| Creamery | 26,814.27 |
| Dairy | 15,082.64 |
| Farm | 20,667.91 |
| Poultry | 151.99 |
| Veterinary Hospital | 2,728.15 |
| Coast Experiment Station | 1,200.08 |
| Pee Dee Experiment Station | 10,159.27 |
| Building Sinking Fund | 10,519.62 |
| Coal Sales | 2,995.66 |
| Barracks Fire Loss | 11,975.08 |
| Student Fees | 5,421.47 |
| Cadet Exchange | 15,165.04 |
| College Departments | 1,959.80 |
| Education of Disabled Soldiers | 9,994.81 |
| Heat, Light and Water | 837.62 |
| Hotel | 18,743.51 |
| Hog Cholera Serum Work | 37,920.87 |
| Insurance | 164.98 |
| Miscellaneous | 30,847.42 |
| Nursery Inspection Tags | 135.15 |
| Rents | 11,918.63 |
| Reserve Fund (Transferred to College Acct.) | 77,203.68 |
| Receiving Account | 25,993.90 |
| Smith-Hughes Fund | 17,683.76 |
| Smith-Lever Interest Account | 1,558.30 |
| Student Loans and Medals | 552.90 |
| | <hr/> |
| | \$ 371,130.49 |
| Balance on hand June 30th, 1921 | 114,083.78 |
| | <hr/> |
| | \$ 485,214.27 |

CADET FUND.**RECEIPTS**

| | |
|------------------------------------|---------------|
| Balance on hand July 1, 1920. | \$ 3,358.00 |
| Subsistence | 154,847.53 |
| Room, Heat, Light and Water | 13,639.14 |
| Hospital | 9,505.17 |
| Hospital | 5,902.10 |
| Incidentals | 5,902.10 |
| Uniforms | 36,351.70 |
| Student Activity Fee | 8,478.58 |
| Diploma Fees | 624.75 |
| Breakage | 2,284.36 |
| Miscellaneous | 4.65 |
| | <hr/> |
| | \$ 249,805.65 |

EXPENDITURES

| | |
|---------------------------------------|---------------|
| Subsistence | \$ 148,550.83 |
| Room, Heat, Light and Water | 13,532.33 |
| Laundry | 14,809.67 |
| Hospital | 9,499.74 |
| Incidentals | 5,190.76 |
| Uniforms | 36,734.20 |
| Student Activity Fee | 8,554.96 |
| Diploma Fees | 641.33 |
| Breakage | 2,284.36 |
| Miscellaneous | 2,158.98 |
| | <hr/> |
| | \$ 241,957.16 |
| Balance on hand June 30th, 1921 | 7,848.49 |
| | <hr/> |
| | \$ 249,805.65 |

STUDENT DEPOSITS.**RECEIPTS**

| | |
|--------------------------------------|--------------|
| Balance on hand July 1st, 1920 | \$ 84.29 |
| Deposits | 88,072.00 |
| | <hr/> |
| | \$ 88,156.29 |

EXPENDITURES

| | |
|-------------------------------------|--------------|
| Checks paid | \$ 87,764.19 |
| Balance on hand June 30, 1921 | 392.10 |
| | <hr/> |
| | \$ 88,156.29 |

SUMMARY**RECEIPTS**

Cash on hand July 1, 1920:

| | |
|---|---------------|
| South Carolina Experiment Station | \$ 2,219.43 |
| Reinvestment Accounts | 132,338.14 |
| Cadet Fund | 3,358.00 |
| Cadet Deposits | 84.29 |
| | <hr/> |
| | \$ 137,999.86 |

Receipts for fiscal year:

| | |
|--|----------------|
| College Account (Including \$77,203.68 | |
| from Reserve Fund | \$ 338,694.14 |
| Hatch and Adams Fund (U. S.) | 32,481.28 |
| Smith-Lever Fund | 211,367.88 |
| State Appropriations | 105,410.80 |
| Reinvestment Accounts | 352,876.13 |
| Cadet Fund | 246,447.65 |
| Cadet Deposits | 88,072.00 |
| | <hr/> |
| | \$1,513,349.74 |

EXPENDITURES

| | |
|------------------------------------|----------------|
| College Account | \$ 338,694.14 |
| Hatch and Adams Fund (U. S.) | 35,122.56 |
| Smith-Lever Fund | 211,367.88 |
| State Appropriations | 105,410.80 |
| Reinvestment Accounts | 371,130.49 |
| Cadet Fund | 241,957.16 |
| Cadet Deposits paid | 87,764.19 |
| | <hr/> |
| | \$1,391,447.22 |
| Cash on hand June 30th, 1921 | 121,902.52 |
| | <hr/> |
| | \$1,513,349.74 |

Report of State Bank Examiner

From July 1, 1920 to June 30, 1921 Inclusive.

GENERAL REPORT

The accounts of Clemson Agricultural College were carefully examined and audited by the State Bank Examiner's Department, for the period closing June 30th, 1921.

During the period audited, expenditures for the College proper amounted to \$288,041.62, including improvements, additions to plant and equipment for teaching. Public Service (Extension work) shows an expenditure of \$50,652.52, and Research (Hatch and Adams Funds), \$35,122.56.

The college treasurer handled during the year \$249,805.65 cadet funds and \$88,156.29 students deposits. These two funds are administered for the sole use and benefit of the students.

An account to which attention is directed is the general head of "Re-investment," is of special interest, inasmuch as the general balance in this account goes to swell the general expenditures of the College in the face of the statement, while not actually doing so. For convenience the College carries a number of side accounts under the general head of "Reinvestments" Accounts which represent merely turn-overs with no new income to the College resulting therefrom. Our exhibit "Reinvestment Account" merely shows the standing of these accounts. Total receipts from Reinvestment for period audited amount to \$352,876.13 while total expenditures amount to \$371,130.49. There is still a turn-over balance in this account of \$114,083.78, due to balance brought forward July 1, 1920.

The College has carried an account in reserve, termed the "Reserve Fund", which has been used heretofore to tide over the period from July 1st. to December 31, during which time there are practically no receipts from the fertilizer tax. Owing to the falling off of the tag tax during the last fiscal year the College has been forced to transfer from "Reserve" to the College account \$77,203.68, which virtually eliminates this fund as a tide-over fund, as stated. It may be stated in a general way that collections from the tag tax for the period of this audit have fallen far short of what is necessary to conduct the college activities, and hence the management will be forced to borrow, under authority of the legislature, in order that the work there may be held up to its usual standard of efficiency. The college authorities appear to have ex-

exercised rigid economy in dispensing its funds and to have made the best possible use of its limited means. While this is to be commended, under the circumstances, it should call for the thoughtful attention of the State Legislators. Owing to the boll weevil disaster, which will probably continue with us, work of the college and especially its public activities cannot be adequately supported in the future as in the past from the tag tax alone.

The clerical condition of the Treasurer's office is excellent, the books free from errors in final balances.

The funds of the college are appropriated by the Trustees on the "Budget System" in which careful consideration is given to every item asked for.

In closing I desire to thank the college Treasurer, S. W. Evans, and his help for their readiness in every way to aid in a thorough audit of the institution.

JAS. H. CRAIG,
State Bank Examiner.

GENERAL ACCOUNT.

RESOURCES

| | | |
|--|--------------|---------------|
| Privilege Fertilizer tax | \$167,505.16 | |
| Interest on Clemson Bequest | 3,512.36 | |
| Interest on Land Script | 5,754.00 | |
| Morrill and Nelson Funds (U. S.) | 25,000.00 | |
| Tuition from Cadets | 13,486.40 | |
| Sales, interest, rents, etc. | 46,232.54 | |
| Transferred from Reserve Fund -- | 77,203.68 | \$ 338,694.14 |

EXPENDITURES.

Public Service—

| | |
|--|-----------|
| Scholarships and advertisements | 12,749.10 |
| Fertilizer analysis and inspection | 29,952.51 |
| Miscellaneous public services, | 2,483.36 |
| S. C. Agricultural Expt. Stations | 5,467.55 |

| | |
|-----------------------------|-----------|
| Total Public Services | 50,652.52 |
|-----------------------------|-----------|

College Operating Expenses—

| | |
|---|------------|
| Salaries, labor, coal, materials, etc ... | 253,910.34 |
| Equipment for teaching | 7,886.46 |
| Improvements and additions to plant | 26,244.82 |

| | |
|--|--------------|
| Total College Operating Expenses | \$338,694.14 |
|--|--------------|

EXPENDITURES CLASSIFIED

Public State Work—

| | | |
|------------------------------------|-------------|-----------|
| Scholarships and advertising | 12,749.10 | |
| Fertilizer analysis | 12,179.11 | |
| Fertilizer inspection | 17,773.40 | |
| Miscellaneous | 2,483.36 | |
| S. C. Experiment station | 5,467.55—\$ | 50,652.52 |

Academic Department—

| | | |
|-------------------------------|---------|-----------|
| English division | 23.40 | |
| History division | 22.30 | |
| Mathematics division | 8.10 | |
| Office and unclassified | 495.14 | |
| Physics division | 381.75— | 930.69 |
| Salaries | | 36,121.27 |

Agricultural Department—

| | | |
|---------------------------------------|-----------|-----------|
| Agricultural Education Division | 1,769.96 | |
| Agronomy Division | 907.68 | |
| Animal Husbandry | 10,459.17 | |
| Botany and Bacteria | 1,552.24 | |
| Dairy Division | 5,085.20 | |
| Entomology and Zoology | 447.56 | |
| Geology and Minerology | 24.52 | |
| Horticulture | 2,530.91 | |
| Office and unclassified | 1,436.90 | |
| Poultry Husbandry | 698.17 | |
| Veterinary Science division | 681.24— | 25,563.55 |
| Salaries | | 37,343.50 |

Chemical Department—

| | | |
|--------------------------|--|----------|
| Chemistry division | | 2,492.80 |
| Salaries | | 8,649.90 |

Engineering Department—

| | | |
|----------------------------------|-----------|-----------|
| Civil Engineering Division | 128.10 | |
| Drawing Division | 1,787.17 | |
| Electrical Engineering | 925.47 | |
| Forge and Foundry | 1,948.13 | |
| Machine shop | 1,344.00 | |
| Mechanical Engineering | 398.57 | |
| Office and unclassified | 706.54 | |
| Woodshop | 2,513.88— | 9,751.86 |
| Salaries | | 32,424.13 |

Military Department—

| | | |
|-------------------------------|--|----------|
| Office and unclassified | | 1,767.76 |
| Salaries | | 6,635.79 |

Textile Department—

| | | |
|-------------------------------|----------|----------|
| Carding and Spinning | 790.44 | |
| Dyeing Division | 360.28 | |
| Office and unclassified | 1,302.53 | |
| Weaving Division | 518.31 | 2,971.56 |
| <hr/> | | |
| Salaries | | 9,159.18 |

Public Utility Department—

| | | |
|---------------------------------|-----------|-----------|
| Campus Division | 3,945.38 | |
| Construction and repairs | 21,366.16 | |
| Farm Division | 3,235.81 | |
| Heat, light and water | 30,351.76 | |
| Roads, sidewalks, hauling | 6,252.34 | |
| Watchman | 919.17 | 66,070.62 |
| <hr/> | | |

Miscellaneous Department—

| | | |
|--------------------------|-----------|-----------|
| Hospital Division | 2,029.19 | |
| Hotel | 299.35 | |
| Library | 3,754.45 | |
| Miscellaneous | 16,164.11 | |
| President's Office | 2,380.26 | 24,627.36 |
| <hr/> | | |

Miscellaneous Department (Continued)—

| | | |
|--------------------------|--|--------------|
| Salaries | | 15,870.24 |
| Telephone Service | | 1,170.70 |
| Treasurer's Office | | 6,490.71 |
| <hr/> | | |
| | | \$338,694.14 |

ADAMS AND HATCH FUNDS.**RESOURCES**

| | | |
|---|-----------|-----------|
| Balance Farm products, July 1, 1920 | 2,219.43 | |
| Received Adams Fund | 15,000.00 | |
| Received Hatch Fund | 15,000.00 | |
| Received Farm products | 2,481.28 | |
| June 30, 1921 over-paid | 421.85 | |
| <hr/> | | |
| Total | | 35,122.56 |

EXPENDITURES

| | |
|------------------------------------|-----------|
| Salaries | 18,964.08 |
| Labor | 6,051.11 |
| Publications | 470.62 |
| Postage and Stationery | 1,045.63 |
| Freight and expenses | 496.83 |
| Heat, light, water and power | 279.31 |
| Chemicals and laboratory | 824.47 |
| Seeds, plants and supplies | 1,434.64 |

| | | |
|---------------------------------------|----------|-------------|
| Fertilizer | 455.15 | |
| Feed Stuff | 1,887.49 | |
| Library | 654.87 | |
| Tools, machinery and appliances | 894.22 | |
| Furniture and fixtures | 461.55 | |
| Scientific apparatus and specimens .. | 480.89 | |
| Live stock | 100.00 | |
| Traveling expenses | 255.04 | |
| Buildings and land | 366.66 | |
| <hr/> | | |
| Total | | \$35,122.56 |

EXTENSION WORK.

| | | |
|----------------------------------|------------|------------|
| Federal Appropriations | 130,297.88 | |
| State Appropriations | 87,070.00 | |
| Appropriations by Counties | 39,227.88 | |
| <hr/> | | |
| Total | | 250,595.76 |

Disbursements.

| | | |
|-------------------------------------|------------|--------------|
| Salaries | 188,095.56 | |
| Labor | 9.00 | |
| Publications | 4,581.54 | |
| Postage, Tel., Freight, etc. | 2,792.95 | |
| Stationery and small printing | 1,119.22 | |
| Heat, light, and water | 606.80 | |
| Miscellaneous supplies | 920.37 | |
| Library | 92.06 | |
| Tools, machinery, etc. | 63.77 | |
| Furniture and fixtures | 3,437.72 | |
| Scientific apparatus | 180.53 | |
| Traveling expenses | 48,279.62 | |
| Contingent expenses | 416.62 | |
| <hr/> | | |
| Total | | \$250,595.76 |

Included in above are \$39,227.88 not included in Treasurer's Cash account but paid directly by counties and carried here in side account.

CADET FUND

| | Receipts | Disbursements |
|-----------------------------|-------------|---------------|
| Balance, July 1, 1920 | \$ 3,358.00 | |
| Subsistence | 154,847.53 | 148,550.83 |
| Heat, light and water | 13,639.14 | 13,532.33 |
| Laundry | 14,809.67 | 14,809.67 |
| Hospital | 9,505.17 | 9,499.74 |
| Incidentals | 5,902.10 | 5,190.76 |
| Uniforms | 36,351.70 | 36,734.20 |

Supplementary Reports

| | | |
|--------------------------------|--------------|--------------|
| Student activity fees | 8,478.58 | 8,554.96 |
| Diploma Fees | 624.75 | 641.33 |
| Breakage | 2,284.36 | 2,284.36 |
| Miscellaneous | 4.65 | 2,158.98 |
| Balance, June 30th, 1921 | | 7.848.49 |
| | <hr/> | |
| Totals | \$249,805.65 | \$249,805.65 |

STUDENTS DEPOSIT ACCUONT.

| | | |
|--|------------|-------------|
| Balance as per ledger July 1, 1920 | 84.29 | |
| Deposits | 88,072.00— | \$88,156.29 |

Disbursements

| | | |
|-----------------------------|-----------|-------------|
| Checks paid | 87,764.19 | |
| Balance, July 1, 1921 | 392.10— | \$88,156.29 |

REINVESTMENT ACCOUNT**Personal Service—**

| | |
|----------------------|-----------|
| Salaries | 26,146.78 |
| Wages | 45,703.13 |
| Architects fee | 125.88 |

Supplies—

| | |
|--------------------------------------|-----------|
| Food, butter fat, etc. | 42,962.21 |
| Fuel, coal, etc. | 5,745.29 |
| Feed, veterinary services, etc. | 48,553.57 |
| Fertilizer and seed | 6,692.77 |
| Refunds to Summer school students | 474.90 |
| General Supplies | 29,629.18 |
| Telegrams, etc. | 14.90 |
| Printing Bulletins | 559.12 |

Transportation—

| | |
|---------------------------------------|----------|
| Traveling of Smith-Hughes force, etc. | 4,800.35 |
|---------------------------------------|----------|

Fixed charges and contributions—

| | |
|---------------------------------------|----------|
| Insurance | 198.03 |
| Aid for education (loans to students) | 500.00 |
| Students medals, (Norris medal) | 52.90 |
| Interest paid on overdrafts | 1,416.22 |

Equipment—

| | |
|-----------------------------------|----------|
| Live stock | 1,063.33 |
| Autos for veterinarians (3) | 2,466.00 |
| General equipment for farm, | 4,828.80 |

Materials—

| | |
|---------------------------------|-----------|
| Building materials, etc., | 18,415.37 |
|---------------------------------|-----------|

Unclassified—

| | | |
|--------------------------------------|------------|--------------|
| Transfer to College account, | 128,036.22 | |
| Transfer to Summer School acct. | 2,745.54— | \$371,130.49 |

Summaries.

| | | |
|--------------------------------------|------------|--------------|
| Expenditures for fiscal year, | 371,130.49 | |
| Overdrafts from previous year, | 42,883.62 | |
| Total, | | \$414,014.11 |
| Receipts for fiscal year, | 352,876.13 | |
| Balance from previous year, | 175,221.76 | |
| Total, | | \$528,097.89 |
| Aggregate Balances, | 528,097.89 | |
| Aggregate Overdrafts | 414,014.11 | |
| Net balances, | | \$114,083.78 |

CONDENSED STATEMENT.

Sources of College Revenue and Expenses for fiscal year July 1, 1920 to June 30, 1921, inclusive:

INCOME

General—

| | | |
|--------------------------------------|--------------|---------------|
| Privilege Fertilizer tax | \$167,505.16 | |
| Interest on Clemson Bequest | 3,512.36 | |
| Interest on Land Script | 5,754.00 | |
| Morrill & Nelson Funds (U. S.) | 25,000.00 | |
| Tuition, | 13,486.40 | |
| Sales, interest, rents etc. | 46,232.54 | |
| Transfer from reserve | 77,203.68— | \$ 338,694.14 |

Adams and Hatch Funds—

| | | |
|-----------------------------|-----------|-----------|
| Balance Farm Products | 2,219.43 | |
| Received Adams Fund | 15,000.00 | |
| Received Hatch Fund | 15,000.00 | |
| Received Farm | 2,481.28— | 34,700.71 |

Extension work—

| | | |
|------------------------------|------------|------------|
| Federal Appropriations | 130,297.88 | |
| State Appropriations | 81,070.00 | |
| Counties (Memorandum) | 39,227.88— | 250,595.76 |

Cadet Fund—

| | | |
|----------------------------|-------------|------------|
| Balance July 1, 1920 | 3,358.00 | |
| Receipts sundry | 246,447.65— | 249,805.65 |

Re-Investment Fund—

| | | |
|---------------------------------|-------------|------------|
| Balance net, July 1, 1920 | 132,338.14 | |
| Receipts | 352,876.13— | 485,214.27 |

Students deposit account—

| | | |
|----------------------------|------------|-----------|
| Balance July 1, 1920 | 84.29 | |
| Deposits | 88,072.00— | 88,156.29 |

| | | |
|---|--|----------------|
| Total Receipts and Balances, | | \$1,447,166.82 |
| Less county appropriations paid direct by | | |
| County officials | | 39,227.88 |

\$1,407,938.94

Supplementary Reports

CONDENSED STATEMENT.

Disbursements.

| | |
|------------------------------|------------|
| College, | 338,694.14 |
| Adams and Hatch funds, | 35,122.56 |
| Extension Work, | 250,595.76 |
| Contingent Fund, | 241,957.16 |
| Students checks paid | 87,764.19 |
| Reinvestment accounts, | 371,130.49 |

Total,\$1,325,264.30

Less paid by Co. (Smith-Lever) 39,227.88— \$1,286,036.42

Balances July 1, 1921:

| | |
|---------------------------|------------|
| Cadet Fund, | 7,848.49 |
| Re-investment Fund, | 114,083.78 |
| Cadet deposits, | 392.10 |

Total,\$122,324.37

Less O. D. farm products, 421.85— \$121,902.52

Total receipts,1,407,938.94

Total disbursements,1,286,036.42— \$121,902.52

Cash on Hand, June 30, 1921.

Accounted for as follows:

| | |
|--|-----------|
| Farmers and Merchants Bank, | 17,500.00 |
| National Bank of Sumter, | 7,000.00 |
| National Bank of Newberry, | 10,000.00 |
| Palmetto National Bank, Columbia, ... | 10,000.00 |
| Farmers Bank, Abbeville, | 3,000.00 |
| Peoples Savings Bank, | 2,000.00 |
| National Bank, of Abbeville, | 2,000.00 |
| Union Savings Bank, | 12,500.00 |
| Bank of Greenwood, | 3,000.00 |
| Fort Hill Bank, | 2,000.00 |
| Commercial Bank, Greenwood, | 4,000.00 |
| Bank of Pendleton, time deposit, | 5,000.00 |
| Bank of Pendleton, checking acct. | 64,495.73 |

\$142,495.73

Less checks outstanding (list exhibited) 20,985.31

121,510.42

Cash in office, (Student deposits)..... 392.10— \$121,902.52

Report of South Carolina Experiment Station

FOR FISCAL YEAR 1920-21.

To President W. M. Riggs,

Clemson College, S. C.

Dear Sir:

The period covered by this, the thirty-fourth annual report of the South Carolina Experiment Station for the fiscal year ending June 30th, 1921, represents one of the most discouraging years in the history of agriculture. Crops and livestock produced at unprecedented high cost for fertilizer and labor and feed had to be sacrificed at a fraction of what it cost to produce them. All farming operations were conducted on a large scale, so the financial losses were exceedingly heavy. Had it not been for the carrying out of the diversified programs promoted by our research and extension agencies, our people would have actually suffered for lack of food.

It is during periods of depression and uncertainty that agricultural research is most appreciated and the results of the experiment station work most in demand. During the recent world war, when every effort was being made to increase the food supply by stimulating crop production, very heavy demands were made upon all of our research agencies, and all scientific data bearing upon production were used. In like manner, during the past year, when prices for agricultural products were at the bottom and the boll weevil had invaded a large part of the state, the people have turned to the research workers for advice and for plans with which to meet the situation. Fortunately our experiment stations have been working along the lines of diversification and have been studying the methods of producing and handling new crops and are in a position to furnish much needed assistance during these trying times when our agriculture is adjusting itself to the rapidly changing conditions.

All lines of our research work have made progress during the year, and much valuable information has been added to our agricultural knowledge through the efforts of our corps of scientists. The appropriation made by our last legislature for agricultural research has enabled us to continue important lines of work, which were lagging for lack of support, and to add a few new projects, which are yielding data of fundamental importance. Ever increasing demands are being made upon our staff, and we feel the need

of increased facilities to enable us to meet these demands. Our research workers are looked to as the chief technical advisors along all agricultural lines—the business in which three-fourths of our people are engaged—and they can only direct this great enterprise along safe and sound lines in so far as they have scientific data upon which to base their conclusions and recommendations. Reliable agricultural information can of course be derived only from intelligently planned and carefully conducted experiments.

The agricultural products of South Carolina for 1919 were valued at five hundred and seven million dollars (\$507,000,000), and those of 1920 at two hundred and eighty-two million dollars (\$282,000,000). If only one-tenth of one percent of this latter amount could be devoted to finding out new facts about this our chief industry, many puzzling problems which are now retarding the progress of our people could be solved and our future agricultural development assured. The average income from agricultural products in South Carolina in 1920 amounted to nearly forty-one dollars (\$41.00) per acre for each acre of cultivated land. Less than one cent per cultivated acre of this amount was spent for agricultural research.

A short discussion of the different lines of work is given below.

EXPERIMENTS WITH CROPS

Seventy-two percent, or two hundred and three million dollars (\$203,000,000) of the two hundred and eighty-two million dollars (\$282,000,000) worth of farm products produced in South Carolina last year was produced by ten of our principal field crops. Diversification is making rapid strides in our state, and yet we must expect that the larger share of our income will always be from what are termed our common field crops. Successful farming with us, therefore, is largely a matter of economic crop production.

There are many factors involved in economic crop production. The most important of these is the productive capacity of the soil as affected by crop rotations, soil building crops, winter cover crops, the judicious use of fertilizers, better terraces, and better drainage. Other important factors are more productive and better strains of crops and better tillage methods and cultural practices.

These factors are being investigated by the research department of Clemson College and by the experiment stations, and our experiments have already demonstrated methods of soil building which increase the average yields per acre from seventy-five to one hundred percent. These experiments have also proved that the yields of our field crops can be increased from fifteen to fifty percent by the use of the best seed of the better varieties, and have demonstrated cultural practices and methods of farm management which are leading to more profitable production.

EXPERIMENTS WITH FERTILIZERS.

Since South Carolina expends annually from twenty-five to fifty million dollars for fertilizers, an amount larger than that of any other state in the Union, it is but natural that the fertilizer problem should loom large before our farmers and that the South Carolina Experiment Station should devote a large share of its energy towards determining the most judicious use of fertilizers. The practices now in vogue in this state are quite largely based on the results secured from our experiments during the past years. Fertilizers, however, can be most efficiently used only after we understand what **combinations** and **amounts** are best suited to the different **soil types**, and to the different **crops**; the **time** and **method** of their applications; and the **relation** they bear to plant development. It is along these lines that we are now directing our experiments in the hope of determining a way by which our fertilizer investments will yield the highest return.

Aside from the regular fertilizer investigations which we are conducting on our experiment stations, one of the most important lines of work conducted this year was the co-operative tests conducted on the farms of some of the most progressive planters in the state. We now have the data from two crops on some of these tests and these are proving of great value to the farmers of the state. There are five different soil types included in these experiments now and others will be added next year. The results so far indicate that nitrogen is the principal limiting factor for both cotton and corn. Especially has this been true on the lighter types of soil. At Allendale we have had a striking example of how well the necessary nitrogen may be supplied by growing legumes such as velvet beans in the corn middles.

EXPERIMENTS WITH BEEF CATTLE AND HOGS

Diversified farming and livestock production go hand in hand. Wherever we find a great livestock country we find a prosperous people. The livestock business in South Carolina is developing as rapidly as good fences and home grown feeds will permit. We have at present more than a million hogs in the state. The livestock barns at the state fair, as well as at the local community and county fairs, are crowded with purebred hogs and cattle. This thoroughly demonstrates the increased interest in this very important phase of agriculture.

There has never been such a demand for experimental results and reliable information relative to the production and feeding of livestock, as there is at this time. The demands are so insistent and the inquiries so varied that the experiment station finds it impossible to answer all of the questions, or to solve all of the problems which are confronting the South Carolina farmer at this

critical time. There are many of the crops which are of special importance in livestock production and feeding that have never been sufficiently tested in the South. In the work which this station is conducting at this time, we are emphasizing crops which are most productive in this section and are attempting to work out forage combinations and rations which will enable us to produce beef and pork economically.

This station has already produced results which are a great saving to the livestock men of the state. Upon advice from the station, based upon experiments, many farmers have changed from the dry lot feeding to the free use of forage crops, thereby saving at least one-third of the grain ration. They have also learned from experiments to supplement corn with tankage and fish meal, in this way balancing the ration and producing more rapid and more economical gains.

Soft Pork Studies.—The soft pork question is the most important problem confronting the swine growers of the South. Many of our crops and feeds, such as peanuts and soy beans, which produce the most economical and most rapid gains of pork, produce hogs whose fat is soft and has a low melting point as compared with the fat of hogs produced on cereals and other grain. The packers and purchasers of hogs discriminate against such pork and offer from two to four cents less per pound for it than they pay for hard pork. Our problem is to find some way to utilize these cheap and productive crops and feeds in such a way as to produce pork that will kill hard and bring the top of the market. Our investigations along this line are conducted in co-operation with the United States Department of Agriculture and the other southern experiment stations. We completed one test along this line last year and have thirty-six hogs now grazing on peanuts. These will be placed on dry lot feeding tests after eight weeks on peanuts and different feeds used in an attempt to harden them.

PLANT DISEASES

The botany division continues to investigate various diseases of plants which are prevalent and destructive in this state. Fungous and bacterial diseases of plants take a much larger toll of our crops each year than is commonly realized. Last year the plant disease survey report of the United States Department of Agriculture, compiled in co-operation with this office, showed the following losses caused by plant diseases in South Carolina: Cotton, 122,000 bales; corn, 3,648,000 bushels; oats, 748,000 bushels; wheat, 132,000 bushels; sweet potatoes, 3,246,000 bushels; Irish potatoes, 155,000 bushels; and peaches, 295,000 bushels. When converted into dollars and cents the losses last year from these seven crops alone, at present prices, totaled about twenty million

dollars (\$20,000,000),—three times the total amount appropriated by our legislature this year for all purposes, and four hundred times the amount appropriated for agricultural research.

These losses from diseases of plants are frequently attributed to other causes. If our peaches or grapes rot, if our cotton fails to open, if our corn turns yellow and dries up in the field and produces mouldy and rotten ears, or if our sweet potatoes are scabby, ill shaped and rough and rot when put in storage, we are apt to charge these troubles to poor seasons or bad luck, when as a matter of fact some definite plant disease is usually responsible for the loss.

These destructive diseases of plants, like the diseases of animals and of man, yield readily to scientific treatment when the causes are known and the habits and behavior of the organisms which cause them are understood. As a result of the research work of this division, cotton anthracnose, a fungous boll rot of cotton, which formerly caused from three to five million dollars loss each year in South Carolina, has been practically eliminated from the state and its ravages greatly reduced throughout the entire South.

Other destructive pests are being taken up and investigated in a similar manner and control measures worked out as rapidly as our time and facilities permit.

BACTERIA IN MILK.

During the past three years the associate bacteriologist of the station has conducted a study of the bacterial content of milk with a view of determining the behavior and development of bacteria during the different periods of handling milk from the time it is milked until it reaches the consumer. The dairymen of the South are concerned chiefly with the furnishing of whole milk to the nearby markets, and this project was undertaken with a view of determining practices and methods of handling milk which would keep down the bacterial content.

A careful study has been made of the so-called germicidal property of milk and the bacterial development during the first two to four hours after milking. Where the milk was drawn from the cows into sterile flasks and then plated out in the laboratory at two-hour intervals, the counts showed that when the initial bacterial content of the milk is low there is no marked increase in the number of bacteria during the first four hours. This would seem to give plenty of time to get the milk cooled down to a temperature which would inhibit bacterial growth.

From these studies thus far it appears that the production of certified milk is largely a matter of sterile utensils, and cleanliness in milking and handling the milk.

EXPERIMENTS WITH DAIRY CATTLE.

During the years 1914—16, when cotton prices were low and our farmers were unable to make a living by the single crop system, many of them turned to dairying. Four creameries were established for the purpose of furnishing markets for the dairy products produced by several thousand farmers of this state. This development was practically lost during the period of the war, when prices of cotton were high and labor was scarce, but since the advent of the boll weevil and the unprecedented decline in prices of all commodities during 1920, farmers are again turning to the dairy business, and the indications are that this will develop very rapidly into one of our most profitable lines of endeavor. It is estimated that we are expending about four million dollars (\$4,000,000) annually for butter which is brought in from other states. The diversified method of farming which we are now advocating involves the growing of more feed, and the dairy cow will make a greater profit on this feed than any other animal to which we can feed it.

Advanced Register Testing.—The official testing of dairy cattle is the most important project we are conducting with cattle at present. This consists of keeping accurate records of the yearly production and butter-fat content of certain cows in our own herd at Clemson College and of a limited number of individuals in the herds of the most progressive dairymen of the state. All of the work is supervised and managed from Clemson College and all of the records are certified to by the head of the dairy division of the experiment station. The actual testing of the herds in the state is done by men employed by this office but paid by the cow testing association.

By fostering the Advanced Register work in this state we are gradually raising the average production of the milk cows in South Carolina. It is the only accurate method we have for determining the actual value of a milk cow. In 1918 there were only three breeders in the state testing their cattle for advanced register records. Now there are twenty-five breeders doing this work. Since July, 1920, thirty-one yearly Holstein records have been completed in the state. These records average 14,262 pounds of milk and 486.44 pounds of butter-fat. During the same period twenty-nine Guernsey records have been compiled with an average of 8,884.6 pounds of milk and 438.32 pounds of butter-fat; also twenty-one Jersey records with an average of 6,997.4 pounds of milk and 382.17 pounds of butter-fat. This makes a total of eighty-one records completed since July, 1920, with a general average of 10,048 pounds of milk and 435.64 pounds of butter-fat. The average dairy cow in the United States produces about 150 pounds of butter-fat in one year, so during this year we have developed in

South Carolina eighty-one records which average nearly three times that of the average cow. At the present time we have ninety-seven additional cows on test.

This work is of special importance at this time because through it we are developing seed stock for our state, which we can depend on to increase the production of the native cattle and in this way make the dairy business more profitable. At the present time there are 213,000 milk cows in South Carolina and we need 240,000 more to meet the rural needs for milk and its products, to say nothing of the needs of the towns and cities. We need 2,560 more purebred dairy bulls in the state at the present time. By encouraging this Advanced Register work we may supply these bulls within the next ten years from our own herds. This is a much better way than to buy such seed stock at high prices from without the state and run the risk of bringing in diseases such as contagious abortion and tuberculosis.

We have a number of experiments under way testing the value of different southern grown feeds in milk production and we are making a careful study of the value of different systems of breeding dairy cattle.

INSECT PESTS.

Insect pests, like plant and animal diseases, constitute an increasingly serious problem for the farmers of the state and for the people in general. Insects of one kind or another attack everything that grows, both plants and animals, and the damage caused to individual crops often amounts to millions of dollars in one season. We not only have the native pests to deal with, but insects new to our state are constantly coming from other states and countries. To cope with these successfully taxes the skill, ingenuity, and technical ability of our scientists to the utmost. Even with the application of all of the available scientific knowledge, some of the pests can not be controlled successfully.

In our investigations of these pests at this station we have undertaken detail studies of the life cycle, habits and behavior of the insect in question as influenced by seasonal and weather conditions and farm practices. In this way we have been successful in some cases in working out what might be termed natural control measures which can be fitted in with the common farm practices. By use of a system of keeping accurate records on the natural enemies, weather conditions, etc., and noting the effect of these on the activity of certain insects, our entomologist has been able to forecast outbreaks of some of our most destructive pests, thereby enabling the farmers to institute control measures.

The work with insect pests has been concerned largely with the

activities of the wireworm, the red spider, the root louse, the peach borer, the Argentine ant, and the boll weevil, together with carefully conducted experiments on the temperature-moisture relation to insect activity. It has been found that the wireworm is not a destructive pest on land where a good program of soil building is practiced. Applying this to practical farming conditions, it develops that this pest can be controlled by increasing the humus content of the soil by the intelligent use of cover crops and summer legumes. Barnyard manure and swamp muck are very valuable when available.

In the case of the red spider our investigations have shown this pest to be dependent upon (1) winter food plants allowed to grow up on the farm, (2) winter minimum temperatures, (3) summer humidity. The last two are things over which we have no control, and fortunately they are not as important as is the first. The prevalence of such winter food plants as poke weeds and long stemmed violets is an important factor in promoting red spider outbreaks.

The cotton root louse is another pest mainly dependent upon winter food plants, prominent among which is life everlasting or "rabbit tobacco." A successful winter cover crop will eliminate any winter food plants and greatly delay the spring recolonization of this pest.

Extensive tests looking to the control of the boll weevil were conducted at the Coast Station at Drainland this season. These experiments included variety studies, collecting weevils, weevil life history studies, and stripping squares, and involved the use of hibernation cages, and poisons. Some of this work was tried out also at the Pee Dee Station after heavy rains made the operations at the Coast Station almost impossible. Our studies of this problem convince us that the weevil cannot be controlled by any single operation or practice, but only by combining the principles of all the different methods developed by the states south of us; that is to say, we must practice early destruction of stalks, clean, rapid and shallow cultivation, picking squares and weevils, early planting of early varieties of cotton, and poisoning.

The temperature-moisture problem has grown to be one of the most interesting problems connected with insect studies. It develops that these factors are so closely related to insect activity as to determine (1) the success or failure of any insect to pass the winter; (2) the rate of increase in a given season on a given crop; (3) the ability of the crop to withstand the attack; and (4) the success or failure of natural insect enemies in keeping the pest in check. With a better knowledge of these relationships we may expect to be able to check successfully a pest by eliminating conditions favorable for successful wintering; to anticipate the severity of an impending outbreak; and to determine when, where and on what crops the outbreaks will occur.

EXPERIMENTS WITH FRUITS AND VEGETABLES

The varied soil and climatic conditions of South Carolina permit the growth of a great variety of fruits and vegetables during practically all seasons of the year. With the advent of the boll weevil our people are undertaking the production of fruits and vegetables on a commercial scale for profit. Large peach orchards are being developed, especially in the sandhill region, and trucking is being engaged in on a large scale in some of the counties bordering the coast.

This experiment station follows the practice of conducting tests from time to time, with the principal fruits and vegetables with a view of determining which varieties are best for home use and for commercial plantings. We have also tried out a great many different kinds of plants introduced from foreign countries by the Office of Seed and Plant Introduction of the United States Department of Agriculture. In many cases where fruits and vegetables are being grown on a commercial scale, fertilizer tests have been made and cultural practices studied. Much of this work is conducted at our Coast Station and at the Pee Dee Station, because these stations are in sections where trucking is engaged in to a large extent.

Experiments carried on over a period of years show that thinning peaches is a profitable orchard practice since peach trees have a tendency to set more fruit than the tree can properly develop. Thinning was done after what is known as the "June drop" and when the young peaches were about the size of a hickory nut. The fruit allowed to remain was spaced as nearly as possible 4 to 5 inches apart, so the fruit would not touch at maturity.

At picking time it was found that the yield on the thinned and unthinned trees was about equal, but a great difference was found in size and color of the fruit. On the thinned trees 90 to 95 percent of the fruit was of good size, well colored, and of a better quality, and the number of culls was negligible; while the fruit from the trees not thinned had 40 percent large, well colored fruit, and 60 percent small, pale colored fruit and culls. These differences were further augmented in the price received for the fruit, as we obtained a third more for the thinned than for the unthinned fruit.

Valuable data have been secured during the year from variety studies with lettuce, Irish potatoes and cantaloupes, and the results are being prepared for publication. These show that the varieties of muskmelons tested, Emerald Gem, Burrel Gem, Jenny Lind, Rocky Ford, and Extra Early Hackensack, are well adapted to this section and produce melons of excellent quality. The lettuce tests indicate that Big Boston and Improved Hanson are best for commercial plantings, and Big Boston, Improved Hanson, and Mignonette best for home use and for local markets. Of the

twenty varieties of Irish potatoes tested, Spauldings Rose No. 4, Irish Cobbler, Bovee, and Early Rose, gave the best yields, producing 285, 273, 272, and 271 bushels per acre respectively.

THE CLEMSON COAST EXPERIMENT STATION

The Coast Station is located on the cut-over pine lands of the lower coastal plain, at Drainland, twenty-four miles northwest of Charleston, on the Southern Railway. There are over two million acres of cut-over lands in South Carolina, and this station was started in 1908 for the purpose of conducting experiments in reclaiming these lands and utilizing them for agricultural purposes. Some splendid results have been obtained from the experiments with field crops, fertilizers, fruits, and vegetables, and these have been published from time to time. This station was established by the Board of Trustees of Clemson College and until 1920 was supported entirely with college funds. During the years since 1914, when the college has hardly had sufficient funds to run on, this sub-station suffered from lack of support and little progress was made with the experimental work. Since the legislature began at the session of 1920 to make an annual appropriation for the support of agricultural research, considerable progress is being made with the several important lines of work under way.

This station is located on low flat land about seventy-five feet above sea level and it is necessary to underdrain the entire area that is in cultivation. The drainage system which was installed during 1908 and 1909 had not been working satisfactorily during the past few years, and during the spring of 1920 the whole system was investigated by the Office of Drainage Investigation of the United States Department of Agriculture, and it was found that some of the tile in many of the lateral ditches was completely filled up with soil and sediment. In accordance with recommendations made by the drainage engineers, all of this was taken up in the fall of 1920 and cleaned out and relaid. The joint was wrapped with building paper and covered with straw to prevent the trenches, and it is believed that no further trouble will result from the tile filling up with soil. This work involved the digging up, cleaning out, and relaying of 10,616 yards of tile at a labor cost of a fraction less than fifteen cents per lineal yard.

During the very excessive rains which began on the 25th and lasted through August 18th, our drainage system was given a very severe test. During this period of 55 days we had rain 41 days, the total precipitation for the period being 16 inches. In spite of this fact the crops on the areas which have drains at distances of 60 feet made fair yields and while of course they suffered considerably from wet weather, they did not suffer to the extent to which the crops suffered where the tile lines were 120 feet apart. In order to make this entire system function efficiently

throughout, it will be necessary that all of the lateral ditches be only 60 feet apart. Plans are under way for doing this.

Additional land for cultivation is badly in need for our experimental work with field crops and for growing forage for the beef cattle and hogs. During the summer work was begun on clearing and underdraining an area of approximately twenty acres of land situated on the front part of the property. This area which we are clearing will greatly facilitate the experimental work at this sub-station. This land, with that already cleared, will give us about 100 acres for cultivation.

We believe that practically all of this cut-over pine land of the low country can be profitably utilized in the production of beef cattle. The native grasses, however, will not stand close grazing and will not carry a sufficient number of cattle to enable the industry to develop as it should. We have therefore undertaken to determine the best grasses and pasture plants to use and the best methods of developing permanent pastures in this section. So far carpet grass and lespedeza are giving us better results than any other plants tested.

We are endeavoring to build up a producing herd of purebred and high grade beef cattle to use in our pasture and feeding experiments. The present herd has developed satisfactorily during the year so that we now have forty-eight head. About half of these are purebred Angus. The cattle were turned on pasture about the first of March this year and can be kept there until November, when they will be turned into the fields for a month or two before going to the barns for the winter.

Alfalfa sown at this station last fall has produced four cuttings of excellent hay, yielding a total of over three tons per acre. Where lime was not used on a part of the alfalfa, the crop was almost a complete failure.

A number of new grasses brought in from other countries are being tested. The most promising of these is "Fundi," a grass resembling crab grass in general appearance and brought in from South America. This gives a good yield of hay.

The variety tests with peaches and grapes at this station were completed last year and the trees and vines taken out to make room for crops of other kinds. These experiments showed clearly that peaches and grapes can be grown successfully and profitably in this section, if they are planted on high well drained land. The grapes, especially when planted on land where the water table is not more than two or three feet below the surface, did not do so well. Of the varieties of peaches tested the best results were obtained with Greensboro, Carmen, and Elberta. With bunch grapes, the best were Brighton, Concord, Niagara, and Lutie. With muscadines, the best were Eden, James, Scuppernong, Thomas, and Flowers.

We have just completed a beef cattle barn which is badly needed in connection with our livestock work. This barn has ten stalls for cows and calves, a grain room, and a large loft space of hay, with two open sheds thirty-eight feet long, for feeding cattle. The barn is comparatively inexpensive, but is large enough and so arranged that it will take care of seventy-five head of cattle. We are very much in need of several small tenant houses for laborers at this station and it is hoped we can build these next year.

THE CLEMSON PEE DEE EXPERIMENT STATION.

The work at the Pee Dee Station has made rapid progress, and the manner in which the people of the state and especially of the Pee Dee section have availed themselves of the facts about farming so aptly demonstrated there is indeed gratifying and encouraging. Almost daily there are interested visitors at the Pee Dee Station, often coming in crowds, and always expressing themselves as having been benefited by what they have seen, and going away more determined to be better farmers and more useful citizens.

The work from the outset has been largely with the field crops and fertilizers, because these were the most important problems of the Pee Dee section. Numerous experiments have been conducted, however, with fruits and vegetables, and some very interesting experiments have been made with hogs.

Experiments have been conducted at the Pee Dee Station for the purpose of determining the best varieties of all the leading crops in that section. Variety tests have been made with cotton, corn, soy beans, peanuts, sweet potatoes, and velvet beans, in addition to a number of orchard and garden crops. In these tests sometimes as many as forty varieties of the same crop have been under observation at the same time. Dixie Triumph, Cleveland, Webber No. 49, and Delta-type Webber cotton, and Brunson, Douthit, Garrick, Pee Dee No. 5, and Williamson corn, have been among the highest producers.

Breeding work has been undertaken at this station with cotton, corn, sweet potatoes, and peanuts. Superior strains of Dixie-Cook and Cleveland cotton, Pee Dee No. 5 corn, Porto Rica sweet potatoes, red Spanish peanuts, have been isolated through continuous selection and these are being further improved and increased for trial and for distribution to farmers.

Fertilizer Experiments.—The fertilizer work has been in progress at the Pee Dee Station since 1913 without any appreciable alteration of the plans as they were originally perfected. The general comparative tests with fertilizers, consisting of one hundred and eighty (180) plots of one-tenth acre each, constitute what is perhaps one the most comprehensive fertilizer investigations in the country. The detailed results of this work are being prepared for publication in bulletins. Important among these fertilizer investigations are

those which are yielding valuable data on (1) rotations, (2) value of certain fertilizer combinations, (3) residual effects of fertilizers, (4) sources of essential elements, (5) theoretical amount of fertilizer necessary to produce a bale of cotton, and (6) time of applying.

A special test is being made on tobacco with the view of determining the relation of fertilizers to yield and quality of tobacco. This year as many as fourteen different formulas were tested under tobacco. From the results of this experiment we are convinced that the average farmer has been using too much fertilizer to make the best quality of tobacco. Fertilizer tests and rotation studies are also being conducted at this station with peanuts and sweet potatoes.

During the last few years variety experiments have been conducted at the Pee Dee Station for the purpose of determining the varieties of the various fruits and vegetables most adaptable to the Pee Dee section. The work along this line has gone far enough to convince us that some varieties of all the various fruits and vegetables can be grown successfully in the Pee Dee section. These experiments lead us to recommend the Moore's Early, Brighton, Lucile, Niagara, and Delaware varieties of grapes; the Carmen, Mamie Ross, Hiley, Belle of Georgia, Elberta, and Burke Cling varieties of peaches; Shiro, Abundance, and Burbank, plums; Lady Thompson and Klondyke strawberries.

During the last fall two four-room tenant houses were constructed at this station for negroes, and we now have sufficient housing facilities here to take care of the majority of the laborers needed on the station farm.

Library.

The agricultural workers of the college and the experiment station have for years felt the need of a working library where all of the publications from the various state experiment stations, the United States Department of Agriculture, and foreign countries were readily accessible and available for study and reference. Agricultural research as well as teaching and extension can be conducted satisfactorily only when the workers have ready access to all of the published information on any problem that engages their attention. This is the second year during which we have had a trained librarian engaged in classifying and cataloguing the mass of valuable material which we have accumulated during the past thirty years.

The librarian's annual report shows books accessioned and made ready for the shelves, 797; volumes bound, 336; volumes in temporary binders, 73; volumes collated for binding, 169. The above does not include the routine work of checking and making accessible 7,214 copies of bulletins and 2,948 copies of agricultural journals, besides 10,562 pieces of minor mail, consisting largely of circular material on agriculture.

Publications

With the changing conditions in our agriculture, there is a great increased and increasing demand for publications. Publications are in greater demand and seem to be more highly appreciated than ever before. The distribution of the publications of this fiscal year has been noticeably greater than in former years.

Four bulletins Nos. 203 to 206 inclusive, and an annual report for the year ended June 30, 1920, have been issued during the year.

PROJECTS UNDER WAY.

The following is a list of projects now under way in the Research Department.

Agronomy Division—

- Cotton variety tests
- Corn variety tests
- Peanut variety tests
- Wheat variety tests
- Velvet bean variety tests
- Soy bean variety tests
- Cowpea variety tests
- Oat variety tests
- Sorghum variety tests
- A study of the inheritance of barrenness in corn
- Inheritance in oats
- Breeding corn
- Breeding cotton (Cooke)
- Breeding wheat
- Breeding barley
- Breeding peanuts
- Breeding work with cotton (general)
- Corn and cotton two-year rotation
- Rotation and fertilizer tests
- Cotton spacing and culture tests
- Corn culture tests
- Effects of companion crops on corn
- Factors influencing oil content of cotton seed
- Effects of soil stirring on moisture, nitrification, yield, etc.
- General fertilizer tests
- Comparative tests of sources of phosphorus
- Comparative tests of sources of nitrogen
- Tests of sources of ammonia for top-dressing cotton
- Effect of Trona potash on cotton and corn
- A test of methods of applying fertilizers
- Tests of theoretical correct fertilizer formulas
- Cooperative fertilizer experiments, cotton, corn, oats, peas

Animal Husbandry Division—

Comparison of forage crops in pork production
Velvet bean meal vs. soy bean meal for fattening hogs
Permanent pasture experiments
Fish meal vs. tankage for hogs
Soft pork investigations
Bur clover and Bermuda vs. dry lots for growing gilts
Pig feeding experiments
Horse and mule breeding experiments
Hampshires vs. Southdowns in the South

Botany Division—

Plant disease survey of South Carolina
Cotton anthracnose investigations
A study of cotton root diseases
Bacterial diseases of cotton
Cotton shedding work
Cowpea and cotton resistance to root knot
Rust resistance in small grains
Tests with imported grass and forage plants
A study of the bacterial content of milk
Forestry plantings.

Dairy Division—

Economic concentrates to supplement cottonseed meal for dairy cows
Corn silage vs. sorghum silage
Cost of raising dairy calves
Prepotency of bulls used in our herd
Line breeding and out-crossing as systems of breeding
Advanced register testing of dairy cows

Entomology Division—

Temperature-moisture in relation to insect activity
Cotton root louse studies
The slender wireworm and its control
Root knot studies
Control of peach tree borers
Factors affecting boll weevil hibernation
Cotton boll weevil control by dusting with calcium arsenate
South Carolina honey flows
Winter packing of bees
The value of the aluminum honey comb

Horticultural Division—

Variety tests of peaches
Variety tests of pears
Variety tests of grapes

Variety tests of strawberries
Variety tests of pecans
Variety tests of potatoes
Variety tests of muskmelons
Variety tests of tomatoes
Variety tests of lettuce
Sweet potato investigations
Irish potato investigation s
Studies in grape spraying
Peach thinning experiments
Test with rust-resistant asparagus
Breeding fruits
Breeding sweet potatoes
Breeding blackberries and raspberries
Cooperative fertilizer experiments with lettuce and potatoes.

Respectfully submitted,

H. W. BARRE,
Director of Research.

Annual Report of The Extension Service

For Fiscal Year 1920-21

To Pres. W. M. Riggs,

Clemson College, S. C.

Dear sir:

About the first of July, 1920, the beginning of the fiscal year with which this report deals, our people had passed through a period of prosperity without parallel in the history of this country. Fortunes were made over night. Land values assumed proportions that many conservative and thoughtful men felt were not for the best interest of the country. An orgy of spending and extravagance had been indulged in to the extent that had it continued would have undermined the sturdy manhood and womanhood of our youth. If at this time a wise leadership had prevailed it could have performed a service to the state that would have been of inestimable and lasting benefit to our people. Hundreds of thousands of bales of cotton were being held by advice from the markets in South Carolina ultimately causing great loss to the people when at the same time hundreds of thousands of bales of cotton were being offered on the markets in the state of Texas greatly to the gain and profit of the people of that State. During this unfortunate period the Extension Service maintained a discreet silence, answering all inquiries as to the advisability of selling or holding cotton that it was a matter to be determined by the individual. It was our belief then, as it is now, that public officials should be most careful in their advice to the people, speaking definitely only when their information is based on actual facts. The financial loss and severe disappointment brought about a state of mind that made it impossible for many of our people to look at things clearly and there was a disposition to criticize all undertakings of a public character. The Extension Service did not escape this criticism as was shown at the tax payers' convention that assembled in Columbia in January during the meeting of the Legislature. After time for reflection the attitude of the people, as is generally the case when unwisely advised or led, changed and our appropriation was made with no dissenting vote being cast in either branch of the Legislature. It is necessary for the funds of the Extension Service to be supplemented with county funds. There were only four counties out of the forty-six that failed to make their county appropriation.

Our relations with the various organizations in the state are of the most cordial character. We have co-operated with the Cotton Association and Warehouse Commissioner to the extent that in our campaign last Fall for additional cotton warehouses there were constructed over 700 additional warehouses, providing sufficient space to store fifty per cent of a normal cotton crop. We also have co-operated with the Development Board, the Sweet Potato and Tobacco Marketing Association, a number of Chambers of Commerce, and in fact it is our policy to work with every agency making a sincere effort to help develop the agriculture of the state. To my mind the fact that the farmers in South Carolina in 1920 had in 820,000 acres more of food crops than they did in cotton, notwithstanding that cotton had been sold during the planting season at a higher price than at any time in the past fifty years, is the best evidence that the preachments of the College for a diversified agriculture were impressing themselves upon the minds of the farmers of the state. South Carolina came nearer feeding itself in the last twelve months than at any time in its recent history.

The Extension Service is now engaged in the largest and most important undertaking within its history, the organizing of the farmers for the co-operative marketing of cotton. At the same time the Extension Service in many of the southern states, notably Texas, Arkansas, Mississippi, North Carolina, Oklahoma and Alabama, are performing the same service, and meeting with more or less success, with the prospect of ultimately thoroughly organizing the farmers in their respective states. Oklahoma has finished its campaign, having signed up 34,000 farmers to their crop contract and controlling 400,000 bales of cotton. Texas is making a vigorous effort to sign under the contract 1,000,000 bales of cotton. Mississippi has up to date signed 200,000 bales and progress is being made in the other states. Our active campaign begins some time during the present month (July) in Spartanburg and Marion Counties. We thought it advisable to proceed in a conservative way confining our efforts for the time being to spreading information and assisting with educational meetings, and at the same time profiting by the mistakes that would most likely occur in the other states. We are convinced that our policy has been a wise one.

In addition to the above general statement I would like to call attention to the following short statements concerning each project.

Project No. 2. Printing and Distribution of Publications

One extension bulletin, seven extension circulars, seven information cards, 121 news letters, and six columns of free press plate service have been published during the year. In addition, one issue each week of the Weekly News Notes has been published. We have also published an annual report of the Extension Service for the year 1920. The Weekly News Notes was enlarged during May and now carries one more column and much more material than formerly.

Project No. 3. County Agents.

We have adhered this year to the policy of employing only men who are qualified both through agricultural college training and through experience to positions as county agents. The work of our agents has consequently been very practical and definite and along well organized lines. The past year put county agent work to the most severe test. The fact that the people of South Carolina now face the boll weevil problem in its full seriousness, coupled with the swift collapse of prices of farm commodities, has had a tendency to make people economize in every possible way. County agent work, however, is generally regarded as more necessary than ever. Most of our agents have risen admirably to the opportunities for service which conditions have put before them. County agents are more than ever being regarded as the paid field force of the agricultural interests of the state and they, therefore, must be men of excellent training and ability.

Results Accomplished by County Agents

The following is a summarized statement showing some of the results accomplished during the calendar year 1920 by county agents and is compiled from the individual annual reports of the agents:

Organization—

Number of community clubs organized, 98; membership, 4,141.

Number of community clubs in counties, 160; membership, 6,985.

Co-operative Buying and Selling—

Number of farmers' organizations buying and selling co-operatively, 23.

Value of stuff bought and sold co-operatively, \$5,553,367.56.

Saved by buying and selling co-operatively, \$162,373.04 (partial only.)

Number of agents keeping bulletin boards, 15.

Number of agents using Market News Service, 26.

Crops—

| | Dems. | Acreage | Average Yield |
|---|-------|---------|---------------|
| Number corn demonstrators | 588 | 8,281 | 39.2 bushels |
| Number cotton demonstrators | 448 | 9,093 | 1,453 pounds |
| Number tobacco demonstrators | 126 | 946 | 812 pounds |
| Number small grain demonstrators | 1,809 | 17,874 | |
| Number hay and forage demonstrators | 1,314 | 7,027 | 2.1 tons |
| Number small legume demonstrators | 1,006 | 16,841 | 1.6 tons |
| Number Irish potato demonstrators | 107 | 3,409 | 132 bushels |
| Number sweet potato demonstrators | 258 | 904 | 182 bushels |
| Totals | 5,156 | 64,375 | |

Orchards—

| | | | |
|--------------------------------|--------|-----------------|---------|
| Number of orchards inspected | 1,266; | Number of trees | 101,557 |
| Number of orchards pruned..... | 1,664; | Number of trees | 75,554 |
| Number of orchards sprayed... | 921; | Number of trees | 74,119 |
| Number of orchards wormed | 921; | Number of trees | 50,088 |
| Number of orchards planted... | 345; | Number of trees | 29,782 |

| | | |
|--------------|-------|---------|
| Totals | 5,117 | 330,100 |
|--------------|-------|---------|

Number of commercial orchards agents assisted in caring for, 54.

Number of trees sprayed, 13,160; pruned, 28,059; wormed, 6,204; total—47,423.

Totals: Orchards—5,171; trees—377,523.

Dairy Cattle—

Number of purebreds brought in; bulls 116; cows and heifers 461.

Number of grade dairy cows, 327.

Number feeding better balanced rations, 588.

Number of stock so fed, 3,064.

Number of purebred dairy bulls in State, 574.

Number of purebred dairy cows in State, 4,011.

Number of cream routes established during year, 3.

Number of purebreds sold with agents' help, 275.

Beef Cattle.—

Number of purebreds brought in; bulls, 73; cows and heifers, 278

Number of grades brought in, 364.

Number of beef-breeding herds started, 31.

Number of feeding cattle brought in, 2,135.

Number of beef feeding demonstrations conducted, 36; cattle, 1,491.

Number of beef cattle cared for by agents' advice, 2,798.

Number of purebred bulls in State, 425.

Number of beef cows in State, 3,593.

Number of purebreds sold with agents' help, 227.

Hogs—

Number of purebreds brought in; boars, 330; sows, 1,239.

Number of herds started, 297.

Number of hog feeding demonstrations supervised, 143.

Number of hogs in these demonstrations, 1,532.

Number of self-feeders placed, 93.

Number of purebred hogs sold with agents' help, 2,196.

Number of farmers started with grazing crops, 1,344.

Number of hogs cared for or fed by agents' advice, 25,861.

Number of purebred boars, 4,596.

Live Stock Diseases and Pests.—

Number of stock, agents, extension workers, and others have induced farmers to have treated for diseases of pests.

Number of cattle; for blackleg, 3,265; tuberculosis, 4,085; digestive and other troubles, 1,275; hemorrhagic septicemia, 813.

Number of hogs; for cholera (single), 10,241; (simultaneous), 68,351; worms, 10,697; lice, 43,956; mange, 4,484.

Number of horses; for distemper, 120; digestive troubles, 267; accidents 114; other troubles, 22.

Number of above treated by agents:

Cattle: Blackleg, 1,851; tuberculosis, 1,432 (1 county).

Hogs: Cholera, 60,761.

Number of agents having instruments for treatment, 46.

Fertilizers.—

Number of farmers advised concerning, 11,929.

Number of fertilizer demonstrations conducted, 392.

Number of tons used on them, 1,568.

Number of communities buying co-operatively, 89.

Amount bought co-operatively, 12,950 tons.

Amount saved, \$68,741.

Number of farmers home mixing, 2,773.

Number of farmers top dressing, at agents' advice, 7,740.

Manures.—

Number of farmers induced to take better care, 1,583.

Number of farmers providing sheds by agents' advice, 686.

Number of farmers composting by agents' advice, 4,950.

Number of manure spreaders bought this year, 30.

Number of farmers using phosphate as reinforcement, 2,262.

Number of tons (estimated) being saved in 18 counties of the State, 1,765,225.

Silos.—

Number built this year, 39.

Number built by advice of agents, 27.

Number in State, 292.

Number of tile, 32; cement, 111; stave, 140; others, 7; stone, 2.

Farm and Farmstead Improvements.—

Work done with the advice and help of agents and other extension workers.

Number of buildings erected, 578.

Number of buildings improved, 280.

Number of building plans furnished, 207.

Number of buildings painted or whitewashed, 314.

Number of home water systems installed this year, 473.

Number of home water systems in State now, 4,522.

Number of home lighting systems installed this year, 869.

Number of home lighting systems in state now, 4,378.

Number of grounds improved, 846.

Number of home sanitary conditions improved, 1,107.

Number of homes screened, 1,109.

Number of privies erected, 298.

Number of telephone systems installed, 27.

Number of farmers induced to adopt crop rotation, 1,674.

Total acreage of such rotations, 51,668.

- Number of new pastures established, 409; acres, 8,102.
- Number of old pastures renovated, 229; acres, 4,727.
- Number of drainage systems installed, 29.
- Number of farmers induced to drain all or part of farm, 216.
- Number of acres drained, by tile, 1000, by ditches, 4,944.
- Number of farmers induced to remove stumps, 560; acreage, 6,237.
- Number of farmers induced to terrace land, 494; acreage, 13,945.
- Number of home gardens planted, 1,922.
- Number of farmers induced to attend short courses, 127.
- Number of boys induced to attend schools or colleges, 225.
- Number of visits by specialists to agents, 1,093.
- Number of county fairs held, 23.
- Number of demonstrators, co-operators and club members having exhibits, 680; number who won prizes, 517.
- Number of demonstrators in truck farming, 165.
- Number of farmers keeping costs records; complete, 127; partially 637.
- Number farmers practicing fall plowing as result of agents' work, 8,861.
- Number of farmers selecting seed, 5,399.
- Number of farmers growing improved seed for sale, 875.
- Number of wood-lots improved by suggestions, 76.
- Number of farmers induced to grow sorghum or sugar cane for syrup, 4,114.
- Number of farmers induced to keep bees, 143.
- Number of farmers induced to save surplus products, 2,381.
- Number of road improvements, demonstrations assisted in, 21.
- Number of miles resulting therefrom, 157.
- Number of farmers planting cover crops to be turned under 8,093.
- Number of new implements and tools bought; binders, 84; hay presses, 66; gas engines, 202; 2-horse cultivators, 469; tractors, 524; motor trucks, 345; corn planters, 493; mowers, 260; grain drills, 186; disk harrows, 530; 1-horse cultivators, 867; plows, 2,087; hay loaders, 29; hay-rakes, 194; silage cutters, 18; cream separators, 48; spraying machines, 214; manure spreaders, 32; small tools, 4,156; peanut-pickers, 59.

Lime.—

- Number of farmers using by agents' advice, 347.
- Number of tons used; burnt lime, 1,833; limestone or its equivalent, 4,449.
- Number of farms in which soil was tested for acidity, 624.

Miscellaneous Extension Work.—

| | |
|--|--------|
| Number of visits by agents to demonstrators | 12,526 |
| Number of visits by agents to co-operators | 12,720 |
| Number of visits by agents to other farmers | 12,911 |
| Number of visits by agents to business men | 3,613 |
| Number of visits by agents to boys and girls clubs | 3,394 |

| | |
|--------|--------|
| Totals | 45,164 |
|--------|--------|

| | |
|---|---------|
| Number of miles traveled, (railroad) | 26,604 |
| Number of miles traveled (team) | 514 |
| Number of miles traveled (automobile) | 306,001 |
| Number of miles traveled (otherwise) | 676 |

| | |
|--------|---------|
| Totals | 333,795 |
|--------|---------|

| | |
|---|--------|
| Number of calls on agent at office or home (personal) | 28,108 |
| Number of calls on agent at office or home (telephone) | 12,174 |
| Number of farmers' meetings held by agents or Extension | |

| | |
|---|---------|
| Service | 1,693 |
| Number of farmers' meetings addressed by agents | 1,463 |
| Attendance | 155,383 |
| Number of field meetings held by agents | 371 |
| Attendance | 18,091 |

| | |
|------------------------------------|---------|
| Total attendance at meetings | 133,845 |
|------------------------------------|---------|

| | |
|---|--------|
| Percentage of time spent in office | 22 |
| Percentage of time spent in field | 78 |
| Number of official letters written | 31,951 |
| Number of articles written for publication | 1,438 |
| Number of circular letters sent out | 66,460 |
| Number of U. S. Dept. of Agri. bulletins mailed | 14,865 |
| Number of Clemson College bulletins mailed | 24,269 |
| Number visits to schools | 991 |
| Number of assistances in school plans | 72 |
| Number of Extension short courses assisted in | 43 |
| Number of days spent in such schools | 59 |
| Total attendance at such schools | 3,523 |

Successful Undertakings by County Agents

A list of successful undertakings of some of the county agents during the year 1920 follows:

Aiken: E. D. Kyzer, County Agent.—

- (1) The organization of the Aiken Cotton Marketing Association.

- (2) Increase of cotton warehouses from 3,000 bales capacity to 9,500 bales capacity (co-operating with State Warehouse Commissioner and the Cotton Association.)
- (3) Campaign on proper harvesting and stacking of peanuts.

Berkeley: L. L. McLendon, County Agent.—

- (1) Started co-operative shipping of hogs in carlots.
- (2) Fair Association organized and first fair held in co-operation with home demonstration agent.

Chester: H. K. Sanders, County Agent.—

- (1) Five new cotton warehouses built this year.
- (2) Advanced registry work started with Guernseys.

Colleton: F. W. Risher, County Agent.—

- (1) Started co-operation in growing one variety of corn and one of sweet potatoes.
- (2) A string of sweet potato curing houses built having a total capacity of 28,000 bushels.
- (3) Established co-operative hog and cattle sales.

Darlington: A. H. Ward, County Agent.—

- (1) A purebred cattle sale was held from which were added to the herds of the county 18 purebred Guernseys and resulted during the year in adding a total of 35 head to the herds of the county.
- (2) Variety tests of cotton to run three years.
- (3) Fertilizer tests with Trona potash.
- (4) Several cars fencing and one car posts ordered for farmers.

Dillon: S. W. Epps, County Agent.—

- (1) Built the first sweet potato curing house in the county (6,000 bushels capacity).
- (2) Started the use of self-feeders for hogs on nine farms in the county. More to follow.
- (3) Put on a successful county fair.

Fairfield: R. H. Lemmon, County Agent.—

- (1) Six cotton warehouses built.
- (2) Conducted 10-acre corn contest resulting in increasing the corn yield of the county.
- (3) Put on special demonstrations in terracing with good results.

Jasper: O. P. Lightsey, County Agent.—

- (1) The first county fair.
- (2) Bank financing the purchase of 17 purebred Duroc pigs for Club members.
- (3) The securing of the first three government planned potato curing houses for this county (total capacity 30,000 bushels.)

Kershaw: J. W. Sanders, County Agent.—

- (1) A campaign for better marketing of cotton resulted in: Two government cotton graders in the county, three community cotton warehouses, one large private warehouse, and a number of small individual farmers' warehouses.
- (2) Demonstrations in purebred hogs vs. scrubs.

Lexington J. W. Shealy, County Agent.—

- (1) Secured seeding of a large crop of small grain.
- (2) Secured reasonable acreage in clover and other winter legumes.
- (3) A successful cotton warehouse campaign.

Newberry: T. M. Mills, County Agent.—

- (1) The organization of a farmers' co-operative association, which handled fertilizers for its members at a great saving.
- (2) Securing a cotton grader for Newberry County.
- (3) A successful warehouse campaign resulted in the building of seven commercial warehouses and five farm warehouses (co-operating with Cotton Association and Commissioner of Agriculture.)

Oconee: G. R. Briggs, County Agent.—

- (1) Boys' club work started on sound basis and foundation laid for county fair.
- (2) Three communities co-operated to build three community cotton storage warehouses having total capacity of 1,100 bales.

Pickens: T. A. Bowen, County Agent.—

- (1) Cover crop work.
- (2) Co-operative buying of fertilizers.

Richland. J. R. Clark, County Agent.—

- (1) Standardization of varieties of cotton and corn by communities started successfully.
- (2) Improvement and increased production of livestock.
- (3) Orchard work. Had put out 5,000 peach trees and 1,000 grape vines in sand hill section of county.

Spartanburg: E. Carnes, County Agent—7 Months.

- (1) Secured building of three sweet potato curing houses.
- (2) A farm implement demonstration attended by 1000 people.
- (3) A successful cover crop campaign resulted in having sown approximately 2000 acres of clover, vetch and rye.

Union: W. D. Wood, County Agent.—

- (1) Warehouse campaign (with Warehouse Commissioner and Cotton Association.)
- (2) The seeding of clover, rye and vetch as cover crops.
- (3) Community breeding of corn.

York: J. R. Blair, County Agent.—

- (1) Called farmers together by communities and bought co-operatively 525 tons of fertilizers at a saving of \$5600.00. Also caused a lot of home mixing to be done at a saving of \$4.50 per ton.
- (2) Agitated the need for a cotton grader for county which resulted in securing one.
- (3) A successful cotton warehouse campaign resulting in having four new warehouses built (with Cotton Association and Warehouse Commissioner.)

Project No. 4. Home Demonstration.

The work of this project is conducted under the immediate supervision of Winthrop College. Under the Smith-Lever law, the Clemson Agricultural College is the State agency for the administration of all extension work in agriculture and home economics and the Director of Extension as joint representative of the United States Department of Agriculture and the Clemson Agricultural College is the one official held responsible by both institutions for the proper conduct of all lines of extension work. By special agreement between the Boards of Trustees of Clemson and Winthrop, the immediate supervision of home demonstration work is assigned to Winthrop College and 25 per cent of Federal and State Smith-Lever appropriations are set aside for home demonstration work under the supervision of Winthrop College. The recommending of home demonstration agents, the deciding of questions of policy and similar matters in connection with the home demonstration work are assigned to Winthrop College, the Director of Extension located at Clemson being held responsible for seeing that all extension funds are expended efficiently and in keeping with the terms of the Smith-Lever law.

Work in this project has been conducted satisfactorily along the usual lines, and in addition, a special effort and much study is being given to the matter of providing an income for the farm woman through the sale of farm produce such as butter, eggs, poultry, and other products peculiar to localities. Home demonstration work is conducted through women's organizations known as Home Demonstration Clubs. These Clubs have been affiliated, in many counties, into county councils and the county councils were recently brought together at Winthrop College into a state organization. A full report on this project has been published by Winthrop College and is therefore not included here.

Project No. 5. Negro Demonstration.

Six negro local agents have been employed in this project during this year to work with negro farmers only. The work of these agents is supervised directly by the President of the State College

at Orangeburg. Demonstrations were conducted under the supervision of these local agents in much the same way as those conducted by the white agents. One hundred and fifty corn demonstrations are reported with an average yield of 38 bushels per acre; 125 cotton demonstrations with an average yield of 1,050 pounds of seed cotton per acre were supervised by the local agents. A great many demonstrations with oats, wheat, rye, forage crops, summer legumes, peanuts, sweet potatoes, orchard, dairy cattle, hogs, fertilizers and farm and home improvements were conducted among negro farmers in the state with the assistance of the local agents. Negro boys' corn and pig clubs were organized in six counties and a total of 250 boys and girls were enrolled.

The following are some statistics relative to the work of the six negro local agents:

| | |
|---|--------|
| Number of visits made to demonstrators | 1,974 |
| Number of visits made to co-operators | 9,451 |
| Number of visits made to other farmers | 1,001 |
| Number of visits made to business men | 395 |
| Number of visits made to boys' and girls' clubs | 395 |
| Miles traveled by rail | 2,355 |
| Miles traveled by team | 2,886 |
| Miles traveled by automobile | 14,098 |
| Miles traveled otherwise | 595 |
| Number of calls at home or office relative to work | 1,456 |
| Number of farmers' meetings held | 124 |
| Number of addresses made | 225 |
| Total attendance at meetings | 21,500 |
| Number of official letters written | 1,948 |
| Number of negro boys attending agricultural schools as a result of club work | 53 |

It is believed that satisfactory progress is being made in this project.

Project No. 6. Lives Stock

The work in Animal Husbandry for the year 1920-21 has been conducted along the following lines: purebred sires, forage crops, protein supplements to corn, purebred females, blue prints for buildings, judging, pig club work.

A total of approximately 35 purebred bulls and a large number of purebred boars have been placed in the State this year.

A large number of farmers have been induced to grow forage crops for their hogs. Bulletins and circulars have been distributed over the State relative to this subject.

In many instances farmers have been induced to feed protein supplements to corn. Such supplements as fish meal and tankage have been effectively used.

There have been approximately 90 head of purebred cows and 100 head of purebred sows placed in the State.

A large number of blue prints have been sent out to farmers to assist them in the construction of hog houses and barns.

Twelve or fifteen fairs have been attended by live stock judges from this Division and in each case they acted as judges for various classes of live stock.

Information has been sent out from this office giving members of pig clubs information as to feeding and management of their pigs. The specialists have also given direct assistance whenever possible.

Project No. 7. Dairy.

The most outstanding work done along this line has been in the organization and operation of co-operative bull associations. Results from this work are fundamental and tend to better the average quality of cattle throughout the state. Three new associations have been completed, making a total of 40 active associations now in the state. These associations own 76 purebred Jersey and Guernsey bulls of the best breeding and have a membership of 820 farmers owning over 3,000 cows that are being bred to these bulls. Work is under way at present on several new associations.

A remarkable exhibit was made at the Greenwood Fair last fall of 26 Jersey bulls belonging to co-operative bull associations in the Piedmont counties. This show attracted national interest to our work, especially in Jersey circles.

The testing of purebred cows for yearly milk and butter fat records has been encouraged through the organization of two testing associations, viz; the Pioneer and the Edisto. These two associations test from 120 to 150 cows each month. Very creditable and constantly improving records are being made. High producing cattle are being developed. This is gradually obviating the necessity of our going outside the state for improved cattle.

Our dairy specialists have been closely allied with the South Carolina Dairymen's Association in all its activities. This association held its annual meeting at Darlington this year and a dairy cattle show was staged in connection with the meeting.

Other lines of dairy work were conducted satisfactorily considering that our force has been short one man the whole year and for a part of the time we had new men at work.

Project No. 8. Agronomy

Three lines of work in agronomy have been emphasized, viz; seed improvement, soil building, and forage crops. The seed improvement work is resulting in the gradual elimination of inferior varieties of cotton and corn through the recommendation and de-

monstration of only a very few of the best varieties suited to each section.

The soil building work has consisted of lectures and field meetings setting forth the advantages of crop rotation and the proper use of fertilizers. The response by farmers to this line of work has been very gratifying. Soil building work is particularly timely at present for the reason that the agriculture of the state is undergoing some very radical changes due to the boll weevil and information relative to crop rotation for soil improvement is more acceptable than in ordinary times.

The forage crop work was started on April 15th and a number of demonstrations have been started in the lower part of the state with forage crops and pastures. While no direct results have yet been secured we consider that this work forms the foundation for a more profitable live stock industry, and is therefore exceedingly important.

Project No. 9. Horticulture.

"Orchard Week" was observed in each county and the county agent from the adjoining county loaned to assist with meetings and demonstrations. Specialists visited counties on regular schedule at the time orchard week was being observed in the particular county. Great interest was aroused in renovating old orchards and in putting out new ones. The scarcity and high prices of nursery stock prevented many from putting out new orchards and incidentally made the renovation of old orchards more popular.

"Orchard Clubs" have been organized and have employed well trained boys to prune and spray orchards of members using equipment purchased co-operatively. The boys have been trained for this work by the county agents and specialists. This plan is a practical way of following up the work of promoting home orchards.

Commercial orcharding has gained more ground this year than during previous years. The main crops of note and promise are peaches, grapes, pecans and dewberries.

Sweet potato curing houses increased over 100 percent during the year. People have been induced to plant one variety of potatoes. Reports have been received from 169 houses having a total of 300,000 bushels capacity and the maximum loss from rot was less than 5 per cent. The production of sweet potatoes in 1920 was 9,391,200 bushels on 88,300 acres with a value of \$10,330,-320.00. Other evidence of the growth of this industry is seen in the large increase in the number of plant growers, create manufacturers and the organization of the South Carolina Sweet Potato Association. A demonstration car known as the "South Carolina Sweet Potato Special" was operated with the assistance of the railroads, over the potato section of the state just prior to the harvest-

ing season. This car carried harvesting and grading implements, storage house plans and models and kinds of information about sweet potato. Nineteen counties were visited and the success of the campaign for better methods was outstanding.

Project No. 10. Poultry.

We have been unable to secure a poultry specialist during this year but have employed a qualified man to take up this work on August 1st, 1921.

Project No. 11. Marketing

Following a careful study in 1919 of methods of handling, packing, grading, marketing and transportation of farm products, special emphasis has been laid upon truck and produce organization work for the purpose of bringing about better grading, handling and marketing of all crops. Among the organizations that we have co-operated with are the South Carolina Sweet Potato Association, South Carolina Produce Exchange, South Carolina Tobacco Association, Carolina Melon & Produce Exchange, and Dixie Produce Exchange. Among the products that we have assisted in marketing are watermelons, cucumbers, Irish and sweet potatoes, snap beans, peanuts, hogs and cattle. While our assistance has been worth a considerable amount in the way of saving to growers our main efforts are to establish more efficient systems of marketing through which farm produce will reach the market in better condition and at less cost to the grower. Co-operation in marketing is being encouraged with a more promising outlook for the success of this method of marketing than we have had before.

Project No. 12. Entomology

Extension work in Entomology has been along two main lines, viz; beekeeping and the control of insect crop pests.

The beekeeping work has developed so rapidly that we have been unable to meet the calls for assistance. Demonstrations consist of requeening so as to improve the stock of bees; transferring to increase the size of the colonies; winter packing to insure large colonies early in the spring during the most profitable honey flows; putting in modern hives so as to increase the quantity of salable honey that may be secured; the harvesting preparation and marketing of honey and wax; disease control; and the rearing of queens and of bees for the market. The demonstrations are made in all sections of the state, certain beeyards in each section being used as centers for which information is diffused through demonstrations.

Demonstrations in control of crop pests have been principally with the cotton boll weevil and the army worm. The poisoning of

the boll weevil with calcium arsenate has received much attention and our efforts have been directed to giving out the best information available on the subject, and to preventing cotton growers making costly mistakes with the poison and the machines used in applying it. A series of demonstrations on boll weevil poisoning was arranged and conducted at about ten points in the southern part of the state during the latter half of August. The great difficulty has been to get the poison applied intelligently and according to directions. Very little reliable information on poisoning has been developed in the state for that reason, although reports from Louisiana, Georgia and Alabama are very promising.

Project No. 13. Plant Pathology

Extension work in plant diseases has been of an emergency character rather than the promotion of definite projects. The emergency work consist of identifying plant diseases in various parts of the State and recommending remedial measures.

Project No. 14. Boys' Club Work

Boys club work was organized in 36 counties out of 46 counties in the state in 1920. Five phases of the work were undertaken, viz; corn club, cotton club, peanut club, pig club and calf club. In addition to these, potato and cowpea clubs were organized by a few county agents. Corn clubs were organized in 25 counties with a total of 462 members. Cotton clubs were organized in 14 counties with a total of 73 members. Peanut clubs were organized in 13 counties with a total of 121 members. Pig clubs were organized in 30 counties with a total of 1,039 members. Calf clubs were organized with a total of 17 members. Miscellaneous clubs consisting of potato and cowpea clubs were organized in 6 counties with a total of 31 members, making a total membership, including all phases of club work, of 1,750.

The same kind of clubs were being conducted again in 1921 but with an increased membership and greater enthusiasm both on the part of the boys and the county agents.

Project No. 15. Rural Organization

The work of Mr. W. H. Mills has been principally along the line of developing co-operative business organizations among farmers. This has been done through addresses, articles giving information, preparation of plans and contracts for various organizations, and participation in conferences with officers and leaders of farmers' organizations. In addition to these lines of work a tentative study of food and feed requirements by counties was made with a view of arriving at an agricultural policy for the farm, the county and the State. This study and policy is being further developed at

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this time in co-operation with the various Divisions of the Agricultural Department of the College.

Project No. 16. Cotton Grading and Marketing

The personnel of this project was increased this year to twenty cotton graders compared with seven during the previous year. These men are paid principally from local funds appropriated by farmers, bankers and merchants and are supervised by the Extension Service and the United States Bureau of Markets. The cotton graders have been working under difficulties due to the low price of cotton and the consequent general dissatisfaction on the part of growers with everything having to do with the marketing of the staple. Notwithstanding this our graders have graded and classed a total of 122,731 bales during the fiscal year.

FUNDS FOR EXTENSION SERVICE WORK FROM ALL

SOURCES FISCAL YEAR ENDING JUNE, 30, 1921

| | |
|--|--------------|
| 1. State appropriation (State Smith-Lever | \$ 81,070.00 |
| 2. Federal Appropriation (Federal Smith-Lever) | 130,297.88 |
| 3. County funds | 104,256.93 |
| 4. U. S. Department of Agriculture funds | 40,300.00 |
| 5. Miscellaneous funds | 47,000.00a |

| | |
|------------------------------|----------------------|
| TOTAL RESOURCES | \$402,924.81b |
|------------------------------|----------------------|

- a Of the above total \$40,000.00 consists of funds raised and disbursed by local farmers' associations with which the extension service was co-operating in maintaining cotton grading work. This fund practically discontinued on July 1, 1921.
- b Of the above total, \$116,766.43 is expended for home demonstration work and work in cities under the general supervision of Winthrop and the immediate supervision of Miss Christine N. South.

EXPENDITURES BY PROJECTS.

| No. | Project | Total Expenditures | State S. Lever | Federal S. Lever | U. S. D. A funds | County funds | Misc. funds |
|--------------|--|-----------------------|-------------------|---------------------|---------------------|-----------------|----------------|
| 1. | Administration | \$ 28,623.20 | \$15,041.35 | \$12,381.85 | \$ 1,200.00 | | |
| 2. | Printing and dis. of Publications | 4,581.54 | 1,659.30 | 2,922.24 | | | |
| 3. | County Agents | 131,977.72 | 13,713.45 | 43,299.58 | 19,538.61 | \$55,426.08 | |
| 4. | Home Demonstration Specialists | 116,766.43 | 20,217.76 | 30,456.43 | 10,261.39 | 48,830.85 | \$7,000.00 |
| 5. | Negro Demonstration | 7,179.25 | 536.47 | 4,842.78 | 1,800.00 | | |
| 6. | Livestock | 9,218.19 | 4,438.38 | 4,779.81 | | | |
| 7. | Dairy | 8,938.34 | 5,637.05 | 3,301.29 | | | |
| 8. | Agronomy | 9,504.55 | 3,404.17 | 6,100.38 | | | |
| 9. | Horticulture | 12,842.25 | 5,097.66 | 7,744.59 | | | |
| 10. | Poultry | 13.85 | | 13.85 | | | |
| 11. | Marketing | 8,679.49 | 3,722.93 | 2,556.56 | 2,400.00 | | |
| 12. | Entomology | 6,937.99 | 1,193.27 | 4,244.72 | 1,500.00 | | |
| 13. | Botany and Plant Pathology | 600.00 | | 600.00 | | | |
| 14. | Boys' Club Work | 8,256.59 | 3,157.08 | 3,899.51 | 1,200.00 | | |
| 15. | Rural Sociology | 2,079.15 | 2,079.15 | | | | |
| 17. | Cotton Grading and Marketing | 46,381.89 | 1,171.98 | 2,809.91 | 2,400.00 | | 40,000.00 |
| | Unexpended balance | 344.38 | | 344.38 | | | |
| Totals | | \$402,924.81 | \$81,070.00 | \$130,297.88 | \$40,300.00 | \$104,256.93 | \$47,000.00 |

PERSONNEL EXTENSION SERVICE.

1920-1921.

A. Administrative Officers.

| Title | Name. | Extension Salary | State S. Lever | Federal S. Lever | U. S. D. A. funds |
|-------------------------------|----------------------|---------------------|-------------------|---------------------|----------------------|
| 1. Director of Extension..... | W. W. Long..... | | | | |
| 2. Asst. Director of Extensi | D. W. Watkins..... | \$4,250.00 | \$3,650.00 | | \$600.00 |
| 3. District Agent..... | H. S. Johnson..... | 3,000.00 | 2,400.00 | | 600.00 |
| 4. District Agent..... | A. A. McKeown..... | 2,750.00 | | \$2,150.00 | 600.00 |
| 5. District Agent..... | T. B. Young..... | 2,750.00 | | 2,150.00 | 600.00 |
| 6. Chief of Horticulture..... | C. C. Newman..... | 1,375.00** | | 1,075.00** | 300.00** |
| 7. Chief of Agronomy Div..... | C. P. Blackwell..... | 1,000.00* | | 1,000.00 | |
| 8. Botany and Pathology..... | H. W. Barre..... | 1,000.00* | | 1,000.00 | |
| 9. Chief of Entomology..... | A. F. Conradi..... | 600.00* | | 600.00 | |
| 10. Chief of Dairy Div..... | J. P. LaMaster..... | 1,000.00* | | 1,000.00 | |
| 11. Chief of Animal Husb..... | L. V. Starkey..... | 1,000.00* | | 1,000.00 | |
| 12. Agriculatural Editor..... | A. B. Bryan..... | 933.33* | | 933.33 | |
| 13. Supervising Agent | | 2,250.00* | 2,250.00 | | 600.00 |
| Boys Club Work..... | L. L. Baker..... | | 1,900.00 | | 600.00 |
| 14. Rural Sociology..... | W. H. Mills..... | | 1,600.00* | | |

* Receive additinoal salary from College and Experiment Station.

** Half year--Jan. 1 to June 30.

B. Specialists.

W. J. Sheely, Beef Cattle Specialist.
 J. B. Parker, Dairy Husbandman.
 W. A. Rowell, Agent in Dairying.
 N. E. Winters, Agronomist.
 J. L. Carbery, Agronomist.
 S. L. Jeffords, Forage Crop Specialist.
 Geo. P. Hoffmann, Extension Horticulturist.
 A. E. Schilletter, Extension Horticulturist
 F. L. Harkey, Field Agent in Marketing.
 L. H. Lewis, Agent in Marketing.
 G. M. Anderson, Extension Entomologist.
 E. S. Prevost, Bee-Keeper Specialist.
 B. O. Williams, Assistant Supervising Agent Boys' Club Work.
 E. G. Parker, Cotton Expert.

C. County Agents.

| Name | County | Name | County |
|----------------------------|-------------|------------------------|--------------|
| L. B. Altman | Greenwood | R. H. Lemmon | Fairfield |
| C. L. Baxter | Beaufort | ..... | Jasper |
| T. A. Bowen | Pickens | C. E. Littlejohn | Charleston |
| H. G. Boylston | Barnwell | J. W. McLendon | Florence |
| G. R. Briggs | Oconee | L. L. McLendon | Berkeley |
| J. D. Brandon | Bamberg | Colin McLaurin | Marion |
| T. B. Brandon | Dorchester | T. M. Mills | Newberry |
| ..... | Hampton | J. E. Trevathan | Laurens |
| S. M. Byars | Anderson | W. R. Gray | Clarendon |
| J. R. Blair | York | J. P. Quinerly | Lee |
| A. H. Chapman | Greenville | S. F. Reid | Calhoun |
| Ernest Carnes | Spartanburg | H. M. Kinsey | Colleton |
| A. B. Carville | Edgefield | Z. D. Robertson | Allendale |
| M. M. McCord | Georgetown | ..... | Abbeville |
| J. R. Clark | Richland | H. K. Sanders | Chester |
| W. O. Davis | Horry | J. W. Sanders | Kershaw |
| J. M. Eleazer | Saluda | J. W. Shealy | Lexington |
| S. W. Epps | Dillon | S. C. Stribling | Cherokee |
| S. E. Evans | Marlboro | W. J. Tiller | Chesterfield |
| E. H. Garrison, Jr., | McCormick | A. H. Ward | Darlington |
| W. F. Howell | Lancaster | W. D. Wood | Union |
| ..... | Aiken | J. F. Williams | Sumter |
| L. S. Wolfe | Orangeburg | L. C. Madison | Williamsburg |

D. Clerks and Stenographers.

| | |
|---------------------------------|------------------------------------|
| Mrs. H. S. Torrence, Librarian* | Harriett V. Moore, Stenographer |
| S. W. Evans, Treasurer* | Sara Witherspoon, Stenographer |
| E. B. Elmore, Bookkeeper* | Susie H. George, Stenographer* |
| C. M. Hall, Accountant | Julia Hook, Mailing Clerk* |
| M. W. Cromartie, Chief Clerk | Rosa Morrison, Stenographer |
| Leila Hart, Stenographer | Sally Corbett, Stenographer* |
| Louise Burgess, Stenographer | Mrs. E. E. Bellenger, Stenographer |
| Lucile Rochester, Stenographer | |

* These parties gave only part of their time to Extension duties.

E. Home Demonstration Agents.

This list of agents not shown for the reason they are working under immediate supervision of Winthrop College and names will appear in the report of Winthrop College.

Respectfully submitted,

W. W. LONG,

Nov. 1, 1921.

Director Extension Service.

Report of The Fertilizer Board

President W. M. Riggs,

Clemson College, S. C.

Dear Sir:—

I respectively submit the following report of the work of the Fertilizer Department for the fiscal year ending June the 30th 1921.

The tonnage of fertilizer sold in this State, as shown by the sales of tags, is 616,280 tons, which is 50.85 per cent of last years sales, and the lowest in this State for 15 years except in 1915,—first year after our entrance into the war.

The high prices at which fertilizers were held and the low prices offered for cotton thus holding up sales, delayed opening of the season even for this diminished amount until after March the first. The prevalent financial conditions forcing such further reductions in prices resulted in reduced acreage in cotton and tobacco, which contributed to this result. The mixtures sold were largely of cotton seed meal and acid phosphate; so while the tonnage was about half of last year, it is believed the cost to consumers will not exceed one-third of last year. Now with infestation by boll weevils of the entire State completed, our farmers are dismayed by the spoilation this year of their chief money crop (cotton), they are planning its largely reduced acreage and a rigid economy in the production of other crops. So the indications now are that the use of commercial fertilizers next year will not exceed that of this year.

ANALYSIS AND INSPECTION.

While the revenue derived from the sale of tags has been cut in half, unfortunately the cost of materials and supplies for inspection and analysis has been but little reduced. With the reduced tonnage above reported only about half the number of official samples were collected, and less than one-fourth the number of farmers samples were sent in for analysis. Eleven inspectors were engaged at the same salary per month of last year, and entered loyally upon their work on February the 28th. With the reduced volume of business, but few violations of law were found and reported and a very small per centage of the samples analyzed were found below their guarantee. These analyses were compiled in our general

Bulletin No. 208, which is now ready for distribution to all requesting it.

For the purpose of comparison, with last year's work the following exhibit is submitted as will more fully appear in Dr. Brackett's detailed report.

| | 1920-21 | 1919-1920 |
|---------------------------------------|---------|----------------|
| Fertilizers other than meal sold..... | 526,416 | 1,183,878 Tons |
| Cotton seed meal sold | 89,864 | 69,912 " |
| Number official samples analyzed..... | 763 | 1,658 |
| Number farmers samples analyzed..... | 36 | 128 |
| Number samples deficient 3% or more | 42 | 144 |

A detailed statement of the expenses of this Department will appear in the Treasurer's itemized report, to which I respectfully refer.

Respectfully submitted,

H. M. STACKHOUSE,

Secretary.

Report of The Chief Chemist

ANNUAL REPORT OF ANALYTICAL WORK OF DEPARTMENT OF CHEMISTRY.

For Fiscal Year 1920-21

To President W. M. Riggs,

Clemson College, S. C. ,

Dear Sir:

I respectfully submit the following report of the work on commercial fertilizers, waters, etc. done for the Board of Trustees, Fertilizer Control, and for the citizens of our State, and for other laboratories, referee and collaborative work, and of work for the Experiment Station, during the year ending June 30th, 1921. For the sake of comparison, the figures for last year are given side by side with this year:

| | 1919-1920 | 1920-1921 |
|--|-----------|-----------|
| Official samples of fertilizers | 1668 | 763 |
| Farmers' samples of fertilizers | 134 | 36 |
| Waters | 45 | 61 |
| Ores, minerals, rocks, etc. for identification | 25 | 47 |
| Limestones, marls, and lime | 6 | 5 |
| Assays for gold and silver | 7 | 2 |
| Ashes (wood, etc.,) | 1 | 0 |
| Miscellaneous | 55 | 777 |
| | 1941 | 1691 |

The most striking facts shown in this summary are:—First, that the official samples of fertilizers collected by our inspectors have fallen off 905, or about 54.25 per cent., as compared with last season; second, that a little more than one-fourth as many farmers' samples of fertilizers have been received this season as were sent in for analysis last season; third, that there has been an increase of about 35.5 per cent. in the number of samples of water analysed this year as compared with last year; fourth, that the number of miscellaneous samples has increased to more than fourteen times the number listed last year, this being due, however, to work done for the Experiment Station, to wit, 754 oil determinations in cotton seed and peanuts.

OFFICIAL FERTILIZER SAMPLES

CLASSIFICATION

| | 1919-1920 | 1920-1921 |
|--|------------|-----------|
| Complete fertilizers ----- | 1001 | 411 |
| Special mixtures (phosphoric acid and ammonia) ----- | 284 | 94 |
| Acid phosphates ----- | 81 | 79 |
| Acid phosphates with potash ----- | 14 | 6 |
| Cottonseed meals ----- | 95 | 77 |
| Nitrate of soda ----- | 41 | 44 |
| American potash ----- | 14 | 0 |
| Foreign potash ----- | 75 | 41 |
| Dried Blood ----- | 4 | 1 |
| Fish ----- | 43 | 3 |
| Tankage ----- | 1 | 0 |
| Sulphate of ammonia ----- | 0 | 1 |
| Miscellaneous ----- | 15 | 6 |
| | <hr/> 1668 | <hr/> 763 |

The six samples listed as miscellaneous in the column for 1920-1921 consisted of one sample each: "Venezuelan goat guano;" nitrate of soda and sulphate of ammonia mixture, "Duplex phosphate;" rape-castor meal ;and two samples both of which were special mixtures of ammonia and potash. The first four samples are omitted from the discussion which follows.

DEFICIENT SAMPLES

Of the 759 samples considered in the discussion 95 fell below the commercial value based on guarantee, as follows:

| | |
|--|----------|
| In available phosphoric acid ----- | 25 |
| In ammonia ----- | 23 |
| In potash ----- | 21 |
| In available phosphoric acid and ammonia ----- | 4 |
| In available phosphoric acid and potash ----- | 7 |
| In ammonia and potash ----- | 13 |
| In available phosphoric acid, ammonia and potash --- | 2 |
| | <hr/> 95 |

Last season out of 1651 samples 327, or 19.81 per cent., were deficient in commercial value based on guarantee while this season the number so deficient is 95 out of 763, or 12.45 per cent.

The extent to which these 95 samples fell below the guaranteed analysis in per cent is as follows:—

| | 0.0-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|----------------------------------|----------|-----------|-----------|----------|------------|
| In available phosphoric acid --- | 2 | 7 | 10 | 12 | 4 |
| In ammonia ----- | 14 | 5 | 10 | 5 | 4 |
| In potash ----- | 6 | 6 | 17 | 10 | 3 |
| | <hr/> 22 | <hr/> 18 | <hr/> 37 | <hr/> 27 | <hr/> 11 |

While this is on the whole a rather better showing than last year, especially in ammonia, the deficiencies in available phosphoric

acid and in potash are more numerous and more serious than they were last year.

Of the 95 samples which fell below guaranteed commercial value, 42 were deficient three per cent or more below that value, as follows:—

| | |
|--|-------|
| In available phosphoric acid ----- | 7 |
| In ammonia ----- | 11 |
| In potash ----- | 10 |
| In available phosphoric acid and ammonia ----- | 1 |
| In available phosphoric acid and potash ----- | 5 |
| In ammonia and potash ----- | 6 |
| In available phosphoric acid, ammonia and potash --- | 2 |
| | <hr/> |
| | 42 |

Last season out of 327 samples deficient in commercial value based on guarantee, 150, or 45.87 per cent were three per cent or more deficient, while this season out of 95 samples, 42, or 44.21 per cent were found three per cent or more deficient, a slight drop. When, however, the comparison is made with the total number of samples analyzed, there was this season a drop of over 61 per cent in the number of samples found three per cent or more deficient in commercial value, for, while last season out of 1651 samples 150 were found three per cent or over deficient or about nine per cent this season out of 763 samples only 42 were three per cent or over deficient, or 5.5 per cent.

The extent to which these 42 samples deficient three per cent or more in commercial value based on guarantee, fell below the guaranteed analysis in per cent is as follows:—

| | 0.0-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|----------------------------------|----------|-----------|-----------|--------|------------|
| In available phosphoric acid --- | 1 | 2 | 3 | 6 | 4 |
| In ammonia ----- | 3 | 2 | 5 | 5 | 4 |
| In potash ----- | 3 | 1 | 8 | 8 | 3 |
| | <hr/> | <hr/> | <hr/> | <hr/> | <hr/> |
| | 7 | 5 | 16 | 19 | 11 |

In addition to the 95 samples deficient in commercial value based on guarantee, there were 229 samples which were found below guaranteed analysis in one or more ingredients, the deficiency being made up, however, by an excess of other ingredients. They were deficient as follows:—

| | |
|--|-------|
| In available phosphoric acid ----- | 79 |
| In ammonia ----- | 22 |
| In potash ----- | 116 |
| In available phosphoric acid and ammonia ----- | 2 |
| In available phosphoric acid and potash -- | 9 |
| In ammonia and potash ----- | 1 |
| | <hr/> |
| | 229 |

Last season out of 1651 samples, 519 were found deficient in one or more ingredients, but not deficient in commercial value based on guarantee, or 31.44 per cent, while this season the number so

deficient is 229 out of 763, or almost exactly 30 per cent, a slight decrease.

The extent to which these 229 samples fell below the guaranteed analysis in per cent is as follows:—

| | 0.0-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1.00 | 1 and over |
|---------------------------------|-----------|-----------|-----------|-----------|------------|
| In available phosphoric acid -- | 35 | 22 | 23 | 13 | 2 |
| In ammonia ----- | 21 | 4 | 0 | 0 | 0 |
| In potash ----- | 60 | 31 | 25 | 13 | 1 |
| | <hr/> 116 | <hr/> 57 | <hr/> 48 | <hr/> 26 | <hr/> 3 |

While there are fewer ammonia deficiencies, there is a decided increase in the number of samples deficient in available phosphoric acid and in potash, especially in potash, due perhaps to a shortage of potash at the time the mixed fertilizers were manufactured.

In connection with the subject of deficiencies, the results of some of the analyses this season as compared with last are interesting:—

| Acid Phosphates | 1919-1920 | 1920-1921 |
|-----------------------------------|------------|-------------|
| Guaranteed 16 per cent. | 76 | 79 |
| Deficient | 19 (25%) | 17 (21.52%) |
| Deficient three per cent. or more | 8 (10.53%) | 6 (7.59%) |

This is a little better showing than last year. There were no acid phosphates received this season for analysis with less than 16 per cent. guarantee of available phosphoric acid.

Acid Phosphates with Potash:—Only six samples of goods of this class were received for analysis this season, as compared with fourteen samples last season. One of these samples was guaranteed 10-0-2, and was found deficient in potash though not deficient in commercial value. Last year there were two samples of the guarantee 10 0 2, of which one was up to guarantee and the other deficient in phosphoric acid, but not three per cent. in commercial value. The other five samples this season were guaranteed 10-0-4:—two were deficient in potash, but not three per cent. in commercial value, while the other three were deficient in both phosphoric acid and potash, and three per cent. or more deficient in commercial value. Last season there were six of the guarantee 10-0-4—one up to guarantee; two not deficient in commercial value, but one of them deficient in potash and the other in available phosphoric acid; one deficient in available phosphoric acid and in commercial value, but not three per cent.; two deficient three per cent. in commercial value, one being deficient in potash and the other in both phosphoric acid and potash. The quality of these goods this season is not so good as last year.

In connection with the potash deficiencies, not only in acid phosphates with potash but also in mixed goods, the following summary for the last seventeen years may prove interesting. It is to be noted that none of the deficient samples here listed is deficient in commercial value.

Supplementary Reports

| Year | Number of Samples | Deficient in One or More Ingredients | Deficient in Potash only | Deficient in Potash Per Cent |
|------|-------------------|--------------------------------------|--------------------------|------------------------------|
| 1905 | 522 | 165 | 53 | 32.12 |
| 1906 | 655 | 201 | 62 | 30.84 |
| 1907 | 743 | 153 | 34 | 22.22 |
| 1908 | 713 | 161 | 54 | 33.54 |
| 1909 | 805 | 197 | 85 | 43.14 |
| 1910 | 1,188 | 235 | 86 | 36.60 |
| 1911 | 1605 | 393 | 182 | 46.31 |
| 1912 | 1689 | 380 | 225 | 59.21 |
| 1913 | 1922 | 389 | 90 | 23.13 |
| 1914 | 2537 | 534 | 113 | 21.16 |
| 1915 | 1227 | 333 | 107 | 32.13 |
| 1916 | 1598 | 378 | 54 | 14.28 |
| 1917 | 1594 | 477 | 75 | 15.72 |
| 1918 | 1474 | 438 | 68 | 15.52 |
| 1919 | 1301 | 362 | 100 | 27.62 |
| 1920 | 1668 | 519 | 193 | 37.19 |
| 1921 | 763 | 229 | 116 | 50.65 |

This summary shows that of the samples deficient in one or more ingredients, but not deficient in commercial value, a very large percentage is deficient in potash only. This deficiency was especially large during the years 1909 to 1912, inclusive. There was a marked drop in the years 1913 and 1914, but in 1915 the percentage deficiency was the same as in 1905. The figures for 1916 are not very significant on account of the small number of samples on the market containing potash. The percentage deficiency in 1919 was considerably greater than it was in 1917 and 1918, and higher than it had been since 1915, but the deficiency this season approaches that of 1912 being 50.65 per cent. against 59.21 per cent., which is still the maximum record for potash deficiency.

Top Dressers:—We have analyzed fewer samples of goods of this class than last year, twentyfour samples against fifty-nine, and the percentage deficiency has been larger this season than last, though the number three per cent. or more deficient in commercial value have been less, as shown by the following figures:—Ten out of twenty-four, or 41.66 per cent., this year were found deficient in commercial value, while last year twenty-one out of fifty-nine, or 35.6 per cent. were so deficient. This season five, one half of the deficient samples, or 20.83 per cent. of the whole number of samples, were three per cent. or more deficient in commercial value, while last season fifteen out of twenty-one deficient samples, or 71.42 per cent. of the whole number (21) were so deficient.

One each of the following guarantees was analyzed this season with the results indicated, and a comparison with last year:—4-7½-1, deficient in ammonia, but not three per cent. in commercial value last year one sample deficient in ammonia but not in commercial value; 4-7½-2½, deficient in ammonia, but not three per cent., last year six samples: one up to guarantee, two not deficient in commercial value, but one deficient in ammonia, the other in potash; one deficient in ammonia and potash, but not three per cent. in commercial value; two samples deficient in ammonia and potash and three per cent. in commercial value. One sample each this season 4-6-0, found up to guarantee, none last year; 7-8-2, deficient in ammonia but not three per cent. in commercial value, last year the

same; 4-7½-3½, deficient in potash but not in commercial value, last year none; 5-7-0, deficient in ammonia but not in commercial value, last year none; 7-6-3, found up to guarantee, last year none of this guarantee.

Two samples each of the following guarantee:—4-9-2, both deficient in ammonia, but not three per cent. in commercial value; 0-9-3, one deficient in potash and not in commercial value, the other deficient in ammonia and potash, but not three per cent., last year nine:—five found up to guarantee; two not deficient in commercial value, but one of them deficient in ammonia and the other in potash; two samples three per cent. or more deficient in commercial value, and deficient in ammonia.

Three samples 2-7-0, all found up to guarantee. Last year sixteen samples:—nine found up to guarantee; three not deficient in commercial value, but two deficient in ammonia and one in phosphoric acid; one sample not three per cent. but deficient in ammonia; three samples three per cent. or more deficient in commercial value, and all deficient in ammonia. These goods are sold as "Palmetto Fish Tankage," though they contain nitrate of soda, and other ammoniates in addition to fish, and the name would seem to be somewhat misleading.

Four samples of the guarantee 7-8-3, of which three were found up to guarantee; one deficient in potash, but not in commercial value. Last year five samples:—two found up to guarantee; one deficient in ammonia, but not in commercial value; two samples deficient three per cent. or more in commercial value, one being deficient in ammonia, the other in ammonia and potash.

Six samples guaranteed 4-7½-0, none up to guarantee; two not deficient in commercial value, but one deficient in ammonia and the other in phosphoric acid; one not deficient three per cent., but deficient in ammonia; three deficient in ammonia, and three per cent. or more in commercial value. Last year thirteen samples of this guarantee were analyzed, of which five were found up to guarantee; one not deficient in commercial value, but in ammonia; one not three per cent. deficient in commercial value, but in ammonia; six samples three per cent. or more deficient in commercial value, and all deficient in ammonia.

AVERAGES OF ANALYSES

| Acid Phosphates | 1919-1920 | | 1920-1921 | |
|--|-----------|------------|-----------|------------|
| | Found | Guaranteed | Found | Guaranteed |
| Available phosphoric acid | 16.47 | 15.88 | 16.53 | 16.00 |
| Insoluble phosphoric acid | 0.57 | | 0.53 | |
| Total phosphoric acid-- | 17.04 | | 17.06 | |
| Special Mixtures (Acid phosphates with Ammonia) | | | | |
| Available phosphoric acid | 8.52 | 7.94 | 8.50 | 8.10 |
| Insoluble phosphoric acid | 1.04 | | 0.81 | |
| Total phosphoric acid--- | 9.56 | | 9.31 | |
| Ammonia ----- | 3.72 | 3.69 | 3.68 | 3.63 |
| Complete Fertilizers | | | | |
| Available phosphoric acid | 8.64 | 8.09 | 8.55 | 8.09 |
| Insoluble phosphoric acid | 0.80 | | 0.81 | |
| Total phosphoric acid -- | 9.44 | | 9.36 | |
| Ammonia ----- | 3.27 | 3.06 | 3.28 | 3.07 |
| Potash soluble in water | 2.92 | 2.72 | 2.77 | 2.67 |

Cottonseed meals

| | | | | |
|---|------|------|------|------|
| Ammonia equivalent of nitrogen ----- | 7.08 | 7.01 | 7.33 | 7.01 |
|---|------|------|------|------|

Nitrate of Soda

| | | | | |
|---|-------|-------|-------|-------|
| Ammonia equivalent of nitrogen ----- | 18.47 | 18.03 | 18.61 | 18.01 |
|---|-------|-------|-------|-------|

American Potash

| | | | | |
|--------------------------|-------|-------|------|------|
| Potash soluble in water— | 37.26 | 37.79 | 0.00 | 0.00 |
|--------------------------|-------|-------|------|------|

Kainits

| | | | | |
|--------------------------|-------|-------|-------|-------|
| Potash soluble in water— | 13.82 | 12.95 | 13.63 | 12.91 |
|--------------------------|-------|-------|-------|-------|

Muriate of Potash

| | | | | |
|--------------------------|-------|-------|-------|-------|
| Potash soluble in water— | 46.78 | 47.21 | 49.89 | 49.00 |
|--------------------------|-------|-------|-------|-------|

Manure Salts

| | | | | |
|--------------------------|-------|-------|-------|-------|
| Potash soluble in water— | 20.24 | 20.46 | 18.02 | 20.00 |
|--------------------------|-------|-------|-------|-------|

Acid Phosphates with Potash

| | | | | |
|---------------------------|------|------|-------|-------|
| Available phosphoric acid | 9.82 | 9.65 | 10.18 | 10.00 |
| Potash soluble in water— | 3.10 | 3.28 | 3.06 | 3.66 |

A striking feature of this table is that American potash seems to have entirely disappeared from our markets. The average for last year represents only fourteen samples of American potash. The averages for the other potash salts listed represent the following number of samples:—kainits, this year thirty-seven, last year sixty-five; muriates of potash, this year three, last year four; manure salts, this year one, last year six. Last year we received fourteen acid phosphates with potash, and this year only six, on which the above averages are based.

The following table shows the averages of the analyses of fertilizers from the time the Board of Trustees of The Clemson Agricultural College of South Carolina took charge of the fertilizer inspection down to the present time, or from 1891 to 1921 inclusive.

YEARLY AVERAGE OF ANALYSES FROM 1891 TO 1921, INCLUSIVE.

| Season | Acid Phos- phates | | Acid Phosphate with Potash | | Complete Fertilizer | | | Cotton Seed Meals | | | Kainita | | Muriate Potash | | Nitrate of Soda | | Acid Phosphate with Ammonia | | |
|-----------|----------------------|--|-------------------------------|--|----------------------|--|----------------------|----------------------|--|----------------------|----------------------|--|----------------------|--|----------------------|----------------------|--------------------------------|--|----------------------|
| | Number of Samples | Available Phos- phoric Acid— Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Ammonia—Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Ammonia—Per Cent. | Number of Samples | Potash Soluble in Water— Per Cent. | Number of Samples | Potash Soluble in Water— Per Cent. | Number of Samples | Ammonia—Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Ammonia—Per Cent. |
| 1890-1 | 49 | 13.02 | 19 | 11.84 | 173 | 9.31 | 2.68 | 1.96 | 30 | ..... | 8.37 | 21 | 12.75 | 1 | 51.96 | 1 | 19.22 | ..... | ..... |
| 1891-2 | 29 | 12.92 | 16 | 11.50 | 112 | 8.83 | 2.80 | 1.95 | 25 | ..... | 8.21 | 18 | 12.51 | ..... | ..... | 1 | 18.63 | ..... | ..... |
| 1892-3 | 48 | 12.82 | 26 | 11.63 | 150 | 9.00 | 2.91 | 1.65 | 20 | 2.62 | 8.40 | 20 | 12.05 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1893-4 | 46 | 13.24 | 22 | 12.01 | 132 | 9.27 | 2.53 | 1.79 | 22 | 2.45 | 8.64 | 17 | 12.37 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1894-5 | 46 | 13.55 | 15 | 12.09 | 87 | 9.42 | 2.55 | 1.77 | 33 | 2.58 | 8.19 | 16 | 12.30 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1895-6 | 42 | 13.43 | 26 | 11.99 | 139 | 9.31 | 2.64 | 1.86 | 34 | 2.57 | 8.45 | 16 | 12.45 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1896-7 | 59 | 13.61 | 31 | 12.06 | 117 | 9.55 | 2.70 | 1.91 | 40 | 2.53 | 8.69 | 22 | 12.44 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1897-8 | 63 | 13.67 | 50 | 11.54 | 205 | 9.15 | 2.70 | 1.93 | 39 | 2.37 | 8.39 | 22 | 12.68 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1898-9 | 73 | 13.74 | 68 | 11.77 | 199 | 9.32 | 2.73 | 2.21 | 40 | 2.76 | 8.25 | 17 | 12.78 | 2 | 51.93 | 2 | 18.96 | ..... | ..... |
| 1899-1900 | 73 | 13.58 | 68 | 11.58 | 200 | 9.50 | 2.75 | 2.13 | 52 | 2.27 | 8.73 | 8 | 12.73 | 4 | 50.95 | 3 | 19.01 | ..... | ..... |
| 1900-1 | 56 | 14.00 | 55 | 11.49 | 139 | 9.40 | 2.87 | 2.47 | 60 | 2.38 | 8.55 | 12 | 12.61 | 2 | 48.92 | 3 | 18.96 | ..... | ..... |
| 1901-2 | 45 | 14.11 | 51 | 11.09 | 255 | 9.32 | 2.84 | 2.34 | 49 | 2.57 | 7.93 | 16 | 12.85 | 4 | 50.54 | 3 | 19.03 | ..... | ..... |
| 1902-3 | 51 | 13.74 | 55 | 10.94 | 265 | 9.63 | 2.19 | 2.42 | 69 | 2.27 | 8.08 | 15 | 12.92 | 2 | 50.25 | 2 | 19.15 | ..... | ..... |
| 1903-4 | 59 | 14.82 | 75 | 11.12 | 180 | 9.12 | 2.99 | 2.90 | 57 | 2.28 | 7.92 | 11 | 12.94 | 7 | 48.79 | 6 | 18.87 | ..... | ..... |
| 1904-5 | 81 | 14.91 | 82 | 10.70 | 250 | 9.19 | 3.12 | 2.98 | 62 | 2.41 | 7.42 | 26 | 12.54 | 6 | 50.49 | 7 | 18.73 | ..... | ..... |
| 1905-6 | 87 | 14.95 | 94 | 10.97 | 330 | 8.74 | 3.25 | 2.98 | 71 | 2.42 | 7.51 | 29 | 12.83 | 13 | 50.05 | 19 | 18.67 | ..... | ..... |
| 1906-7 | 111 | 14.95 | 72 | 10.76 | 321 | 8.91 | 3.29 | 3.29 | 99 | 2.68 | 7.32 | 1.69 | 12.83 | 13 | 51.52 | 20 | 18.49 | ..... | ..... |
| 1907-8 | 91 | 14.71 | 64 | 10.57 | 354 | 8.91 | 3.01 | 3.01 | 114 | 2.37 | 7.40 | 1.61 | 12.91 | 15 | 51.04 | 17 | 18.33 | ..... | ..... |
| 1908-9 | 108 | 15.02 | 80 | 10.55 | 396 | 9.26 | 3.03 | 3.08 | 115 | 2.39 | 7.27 | 1.71 | 13.03 | 14 | 50.16 | 21 | 18.26 | ..... | ..... |
| 1909-10 | 159 | 15.18 | 74 | 10.16 | 599 | 8.89 | 3.31 | 3.34 | 133 | 2.37 | 7.20 | 1.67 | 13.10 | 26 | 50.96 | 40 | 18.10 | ..... | ..... |
| 1910-11 | 187 | 15.39 | 101 | 10.62 | 942 | 9.00 | 3.34 | 3.33 | 177 | 2.46 | 7.26 | 1.59 | 13.00 | 24 | 50.18 | 50 | 18.46 | ..... | ..... |
| 1911-12 | 180 | 15.42 | 116 | 10.68 | 960 | 9.07 | 3.46 | 3.22 | 153 | 2.17 | 7.54 | 1.58 | 13.00 | 47 | 50.42 | 76 | 18.55 | ..... | ..... |
| 1912-13 | 176 | 15.83 | 85 | 10.43 | 963 | 9.07 | 3.46 | 3.22 | 153 | 2.17 | 7.54 | 1.58 | 13.00 | 47 | 50.42 | 76 | 18.55 | ..... | ..... |
| 1913-14 | 229 | 16.10 | 91 | 10.63 | 1523 | 8.79 | 3.44 | 3.75 | 188 | 2.36 | 7.37 | 1.65 | 13.72 | 29 | 51.51 | 48 | 18.64 | ..... | ..... |
| 1914-15 | 150 | 16.30 | 69 | 10.75 | 773 | 8.91 | 3.44 | 3.75 | 188 | 2.36 | 7.37 | 1.65 | 13.72 | 29 | 51.51 | 48 | 18.64 | ..... | ..... |
| 1915-16 | 200 | 16.40 | 7 | 10.72 | 2.42 | 8.91 | 3.44 | 3.75 | 90 | 2.46 | 7.21 | 1.56 | 13.44 | 2 | 50.17 | 92 | 18.25 | 18 | 12.09 |
| 1916-17 | 200 | 16.40 | 7 | 10.72 | 2.42 | 8.91 | 3.44 | 3.75 | 245 | 2.31 | 7.05 | 1.51 | 13.44 | 0 | ..... | 33 | 18.53 | 555 | 8.85 |
| 1917-18 | 108 | 16.62 | 1 | 10.90 | 501 | 8.70 | 3.31 | 2.13 | 202 | 2.44 | 6.88 | 1.54 | 0 | 0 | 0 | 0 | 18.69 | 640 | 8.76 |
| 1918-19 | 116 | 16.81 | 3 | 9.99 | 521 | 8.54 | 3.09 | 2.25 | 266 | 2.33 | 7.06 | 1.57 | 0 | 0 | 0 | 21 | 18.50 | 470 | 8.66 |
| 1919-20 | 69 | 16.86 | 6 | 10.36 | 544 | 8.82 | 2.95 | 2.23 | 199 | 2.34 | 7.06 | 1.47 | 0 | 0 | 0 | 11 | 18.59 | 357 | 8.84 |
| 1920-21 | 81 | 16.47 | 14 | 9.82 | 932 | 8.64 | 3.27 | 2.92 | 94 | 2.61 | 7.08 | 1.51 | 65 | 0 | 46.78 | 40 | 18.47 | 284 | 8.52 |
| 1921-22 | 79 | 16.53 | 6 | 10.18 | 411 | 8.55 | 3.28 | 2.77 | 77 | ..... | 7.33 | ..... | 37 | 3 | 49.89 | 44 | 18.61 | 94 | 8.50 |

GRADES

In the following table the number of acid phosphates, acid phosphates with potash, complete fertilizers, cottonseed meals, and special mixtures (acid phosphates with ammonia) of each grade, according to guarantee, is placed side by side with the number found on analysis to belong to that grade, fertilizers having commercial values equal to schedule grades being placed in these grades:—

| | High | | Standard | | Low | |
|--------------------------------------|---------|-------|----------|-------|---------|-------|
| | Claimed | Found | Claimed | Found | Claimed | Found |
| Acid phosphates (79) | 79 | 79 | 0 | 0 | 0 | 0 |
| Acid phosphates with potash (6) | 5 | 4 | 1 | 2 | 0 | 0 |
| Complete fertilizers (411) | 294 | 364 | 109 | 37 | 8 | 10 |
| Cotton seed meals (77) | 0 | 2 | 77 | 72 | 0 | 3 |
| Special mixtures (94) | 45 | 68 | 38 | 21 | 11 | 5 |
| Total (667) | 423 | 517 | 225 | 132 | 19 | 18 |

These results are due to the following changes in grade ascertained by analysis:—

| | Low to High | Low to Standard | Standard to High | High to Standard | High to Low | Standard to Low | No Change |
|------------------------------------|-------------------|-----------------------|------------------------|------------------------|-------------------|-----------------------|--------------|
| | High | Standard | High | Standard | Low | Low | |
| Acid phosphates (79) | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| Acid phosphates with potash (6) .. | 0 | 0 | 1 | 0 | 0 | 0 | 5 |
| Complete fertilizers (411) | 2 | 2 | 69 | 1 | 0 | 5 | 332 |
| Cotton seed meals (77) | 0 | 0 | 2 | 0 | 0 | 3 | 7 |
| Special mixtures (94) | 0 | 6 | 23 | 0 | 0 | 0 | 65 |
| Total (667) | 2 | 8 | 95 | 1 | 0 | 8 | 553 |

This table shows that out of 667 samples, 553 were of the grade claimed, 105 were of a higher grade, and nine of a lower grade than that claimed for them. Last season out of 1465 samples, 1284 were of the grade claimed, 110 were of a higher grade, and 71 of a lower grade than that claimed for them. Expressed in percentages the figures for the season just before the outbreak of the Great War, and for the seven seasons since the war began are as follows:—

| Season | Of Grade Claimed | Higher than Grade Claimed | Lower than Grade Claimed |
|--------------------|------------------|------------------------------|-----------------------------|
| 1913-1914 -- -- -- | 88.42 | 9.99 | 1.57 |
| 1914-1915 -- -- -- | 85.95 | 6.37 | 7.67 |
| 1915-1916 -- -- -- | 82.04 | 13.50 | 4.45 |
| 1916-1917 -- -- -- | 88.57 | 8.62 | 2.80 |
| 1917-1918 -- -- -- | 87.75 | 9.66 | 2.51 |
| 1918-1919 -- -- -- | 84.08 | 11.06 | 4.85 |
| 1919-1920 -- -- -- | 87.65 | 7.51 | 4.85 |
| 1920-1921 -- -- -- | 82.90 | 15.74 | 1.35 |

This table shows that in the year previous to the Great War about 98 per cent. of the samples were of the grade claimed or higher, that in 1914-1915 there were about 92 per cent., in 1915-1916 about 95.50 per cent., in 1916-1917 and in 1917-1918 about 97 per cent., in 1918-1919 about 95 per cent., in 1919-1920 about 95.2 per cent., and in 1920-1921 about 98.6 per cent.

In order to compare the results of this season's grades with those of last season, the following summary is given:—

| | 1919-1920 | | | 1920-1921 | | |
|-------------------------------|-----------|-------|-------|-----------|-------|-------|
| | Claimed | Above | Below | Claimed | Above | Below |
| Acid phosphates ----- | 80 | 1 | 0 | 79 | 0 | 0 |
| Acid phosphates with potash-- | 9 | 2 | 3 | 5 | 1 | 0 |
| Complete fertilizers ----- | 870 | 89 | 33 | 332 | 73 | 6 |
| Cottonseed meals ----- | 82 | 1 | 11 | 72 | 2 | 3 |
| Special mixtures ----- | 243 | 17 | 24 | 65 | 29 | 0 |

Attention has been called for the past five years in my annual reports to the number of Low Grade cottonseed meals on our markets. For the sake of comparison, there are given in the following table the number of samples of cottonseed meal and the percentage of low grade meals from 1915-1916, when the number first became noticeable, to 1920-1921, inclusive:—

| Season | Number of Samples. | Low Grade Cottonseed Meals, Per Cent |
|---------------------------|--------------------|--------------------------------------|
| 1915-1916 --- -- -- -- -- | 245 | 16.73 |
| 1916-1917 --- -- -- -- -- | 192 | 9.90 |
| 1917-1918 --- -- -- -- -- | 255 | 4.31 |
| 1918-1919 --- -- -- -- -- | 199 | 10.50 |
| 1919-1920 --- -- -- -- -- | 94 | 11.70 |
| 1920-1921 --- -- -- -- -- | 77 | 3.90 |

The cotton seed meals this season were of much better quality than for any other year given in this table. They were freer from lint, and while all were claimed standard, two were found high grade, and only three below standard.

NITROGEN

DEFICIENCIES, SOURCES, AVAILABILITY.

Nitrogen Deficiencies:—In connection with the subject of deficiencies in nitrogen or equivalent ammonia, the following table is interesting. It is to be noted that none of the deficient samples listed is deficient in commercial value.

| Year | Number of Samples | Deficient in one or more Ingredients. | Deficient in Nitrogen only | Deficient in Nitrogen, Per Cent. |
|------|-------------------|---------------------------------------|----------------------------|----------------------------------|
| 1905 | 522 | 165 | 61 | 36.96 |
| 1906 | 655 | 201 | 87 | 43.28 |
| 1907 | 743 | 153 | 81 | 52.94 |
| 1908 | 713 | 161 | 77 | 47.82 |
| 1909 | 805 | 197 | 74 | 37.56 |
| 1910 | 1188 | 235 | 79 | 33.61 |
| 1911 | 1605 | 393 | 107 | 27.22 |
| 1912 | 1689 | 380 | 71 | 18.68 |
| 1913 | 1922 | 389 | 190 | 48.84 |
| 1914 | 2537 | 534 | 257 | 48.13 |
| 1915 | 1227 | 333 | 145 | 43.54 |
| 1916 | 1598 | 378 | 130 | 34.39 |
| 1917 | 1594 | 477 | 224 | 46.96 |
| 1918 | 1474 | 438 | 189 | 43.15 |
| 1919 | 1301 | 362 | 160 | 44.19 |
| 1920 | 1668 | 519 | 123 | 23.70 |
| 1921 | 763 | 229 | 22 | 9.61 |

The most striking feature of this table is the very small number of samples this season deficient in ammonia only, but not deficient in commercial value as compared with the years 1907 and 1908

when the total number of samples was approximately the same as this season and the samples deficient in ammonia only reached nearly 53 and 48 per cent. respectively. It will also be noted that the number of samples deficient in ammonia only is smaller than at any time in seventeen years.

Nitrogen, sources and availability.—The new fertilizer law, effective July 1, 1920, requires that manufacturers of fertilizers guarantee the per cent. of water-soluble ammonia equivalent of nitrogen within such limits as the Board of Fertilizer Control may prescribe. No limits were adopted for this season, in order to allow for the accumulation of sufficient data on which to base fair and reasonable limits. Limits have been adopted for next season, and the resolution of the Board of Trustees, Board of Fertilizer Control, will be found on page six of the fertilizer bulletin for 1921. This resolution allows a variation of ten points on goods with a water-soluble guaranteed up to and including $33\frac{1}{3}$ per cent., and of fifteen points on goods guaranteed above that figure. For example goods guaranteed 25 per cent. water-soluble would be passed if found 15 per cent. or 35 per cent.; and goods guaranteed 50 per cent. water-soluble would be passed if found 35 per cent. or 65 per cent. of the total ammonia equivalent found.

As was the case last season, the results of this season's determinations of water-soluble ammonia equivalent of nitrogen indicate a large use of highly water-soluble ammoniates, due in part probably to a scarcity of organic ammoniates. Apparently much nitrate of soda and sulphate of ammonia have been used. The following table summarizes the results of the work for this season and last season, and shows the number of samples falling within certain percentage limits, and the percentage relation of these figures to the total number of samples examined, this relation being shown in parentheses:—

| Per Cent. Water-Soluble Ammonia equivalent of Nitrogen. | Number of Samples | |
|---|----------------------|----------------------|
| | 1919-1920 | 1920-1921 |
| Less than 10 | None | None |
| 10 to 20 | 3 | 2 |
| 20 to 30 | 10 | 1 |
| 30 to 40 | 10 (0.79 per cent) | 6 (1.19 per cent) |
| 40 to 50 | 29 (2.32 per cent) | 10 (1.99 per cent) |
| 50 to 60 | 98 (7.83 per cent) | 47 (9.36 per cent) |
| 60 to 70 | 275 (21.96 per cent) | 87 (17.33 per cent) |
| 70 to 80 | 448 (35.78 per cent) | 145 (20.82 per cent) |
| 80 to 90 | 264 (21.08 per cent) | 155 (30.87 per cent) |
| 90 to 100 | 115 (9.18 per cent) | 49 (9.76 per cent) |
| | <hr/> 1252 | <hr/> 502 |

While these figures speak for themselves it may not be out of place to say that one would not expect to find an ammoniated fertilizer containing less than ten per cent. of water-soluble ammonia equivalent of nitrogen, since organic ammoniates will generally show as much as ten per cent. We have found cottonseed meals with as high as 16 per cent, that is nearly one per cent. out of a total of six per cent.

There were 502 samples of ammoniated fertilizers examined for

water-soluble ammonia equivalent of nitrogen, of which only 138, or 27.49 per cent were guaranteed, according to the records in the office of the Secretary of Fertilizer Control. While this would seem to indicate the failure of the manufacturers of fertilizers to comply with the new fertilizer law, it may be due in part to goods having been made up before the new law went in to effect, in part to a lack of a clear understanding of the law, and in part to oversights of inspectors in noting guarantees of water-soluble ammonia equivalent of nitrogen.

Of the 502 samples above referred to, which were distributed between seventy-four companies or subsidiaries, 313 samples were distributed between sixteen companies or subsidiaries. In the following table are shown the number of samples credited to each of the sixteen companies, and the number of samples in which the water-soluble ammonia equivalent of nitrogen was guaranteed:—

| Number of Samples | Number of Samples in which Water-Soluble Ammonia equivalent of Nitrogen Guaranteed. |
|-------------------|--|
| 10 | 2 |
| 11 | 2 |
| 11 | 2 |
| 13 | 1 |
| 13 | 2 |
| 13 | 4 |
| 13 | 4 |
| 14 | 2 |
| 17 | 3 |
| 19 | 7 |
| 21 | 9 |
| 27 | 2 |
| 29 | 14 |
| 32 | 9 |
| 34 | 8 |
| 36 | 9 |
| <hr/> 313 | <hr/> 80 |

In making up this table companies were selected with ten or more samples. It will be noted only two companies guaranteed about one-half the samples; two about one-fourth; four about one-third; five about one-sixth; one guaranteed one-fifth of the samples, and the remainder one sample each out of 13, and two samples out of 27. The totals show that only a little over one-fourth of the samples were guaranteed, about 25.55 per cent.

A rather surprising condition is revealed by a comparison of the guaranteed with the found water-soluble ammonia equivalent of nitrogen, as shown in the following digest of the results obtained on the 138 samples which were guaranteed, as indicated above:—

26 samples guaranteed 25 per cent. water-soluble ammonia, found one 72½, one 78, eleven 81 to 89 per cent. and thirteen 90 to 96 per cent.

4 samples guaranteed 33 per cent. water-soluble ammonia, found 71½, 72, 81½, 82½.

42 samples guaranteed 33 ⅓ per cent. water-soluble ammonia, found one each. 27, 34½, 45, 92½; nine 50 to 60; six 60 to 70; twelve 70 to 80; eleven 80 to 90.

1 sample guaranteed 35 per cent. water-soluble ammonia, found 65½ per cent.

64 samples guaranteed 50 per cent. water-soluble ammonia, found one each 34, 35, 45 per cent.; three 50 to 60; six 60 to 70; twenty 70 to 80; twenty-seven 80 to 90; and five 90 to 98.

1 sample guaranteed 66 per cent. water-soluble ammonia, found 67½ per cent.

These results would seem to indicate one of two things, either the manufacturers have not exercised sufficient care in analyzing their raw materials before making their water-soluble ammonia guarantees, or else they have assumed that organic ammoniates would show no water-soluble ammonia and based their guarantees entirely on the fact that the inorganic ammoniates, such as nitrate of soda, nitrate of potash and sulphate of ammonia, are 100 per cent. soluble in water.

In the future it will be our duty to make public the names of all manufacturers who fail to comply with the fertilizer law requiring the guarantee of water-soluble ammonia equivalent of nitrogen, and of all manufacturers whose guarantees do not fall within the limits prescribed by the Board of Fertilizer Control. As unsatisfactory as are the results this season, they show that the manufacturers can comply with the limits prescribed by the Board of Fertilizer Control, if they exercise reasonable care in making their guarantees, and that these limits are liberal.

The nitrogen availability standards for the coming season are the same as they have been for the last six years, and are as follows:—

“1st. The Modified Neutral Permanganate Method of Street is still in force.

“2nd. An unmixed fertilizer material furnishing organic nitrogen must show an availability of 85 per cent. of the total organic nitrogen found on analysis.

“3rd. The water-insoluble organic nitrogen in mixed fertilizers must show an availability of 75 per cent. by Street's method, if this water-insoluble organic nitrogen amounts to one-third or more of the total nitrogen found on analysis.”

Five hundred and two mixed ammoniated fertilizers were examined for water-insoluble organic nitrogen, of which 100 samples were found to contain water-insoluble organic nitrogen amounting to one-third or more of the total nitrogen determined by analysis. All of these 100 samples were examined by Street's method and came up to the requirement of 75 per cent. availability. These results show that the organic ammoniates used by the manufacturers this season leave nothing to be desired as far as quality is concerned, at least in the samples which fell into our hands.

Farmers' Samples of Fertilizers:—In addition to the official fertilizer samples collected by inspectors, there have been analysed this season thirty-six samples for purchasers, as provided for in Section 17 of the new fertilizer law, effective July 1st., 1920.

Waters.—Of the sixty-one samples of water listed, ten were sanitary analyses of the Barracks Spring and ten of the stand-pipe water, regular monthly analyses of the college water supply; thirty-seven sanitary and three complete mineral analyses of waters sent in by citizens of our State; and one sample of water analysed for iron only.

Ores, Minerals, etc.;—Forty-seven specimens were received and examined as compared with twenty-five last season. They consisted as usual very largely of iron pyrites, clays, micas, quartz, etc.

Limestones, Marl, and Lime:—Five samples of materials of this nature were analysed this season as compared with six last season.

Assays for Gold and Silver.—Two samples were assayed for gold and silver this season as compared with seven samples last season.

Ashes:—No samples of ashes were received for analysis this season, and only one sample last season, due no doubt to the abundance of foreign potash now on the market.

Miscellaneous:—These include 720 samples of cotton seed and thirty-four samples of pea nuts, in which the oil content was determined for the Experiment Station; eight were check analyses made for various laboratories; ten samples consisted of one each "mill cleanings," mud, soil, peat, clay for oil, supposed native oil, abattoir product, home mixture of humus and acid phosphate, efflorescence forming on the wall of the Agricultural Building, velvet bean meal; three toxicological analyses in cases of suspected poisoning of human beings.

Distribution of the Work:—The fertilizer analyses were made by Messrs. Robertson, Foy and Freeman, the samples prepared for analysis by Mr. L. J. Gunter.

Practically all of the miscellaneous work was performed by Mr. Freeman, except the three toxicological analyses, which were made by Mr. Robertson.

All of the nitrogen work, including, total, water-soluble and the availability determinations were made by Mr. Robertson.

All of the samples of water were analysed by Mr. Freeman, except four by Mr. Foy during Mr. Freeman's absence last August. Mr. Freeman also analysed the limestones, marls and lime and made the assays for gold and silver.

It gives me pleasure to be able to say that all the work has been faithfully and efficiently performed, and that complete harmony and the most hearty cooperation has prevailed throughout the year.

Respectfully submitted,

R. N. Brackett, Chief Chemist.

Clemson College, S. C., Aug. 9, 1921.

Report of The State Entomologist

To The Crop Pest Commission,

Through President W. M. Riggs.

Gentlemen:—

We submit herewith the annual report of the work of the Crop Pest Commission for the fiscal year ending December 31, 1921.

Due to economic reaction, an increased number of people directed their attention to the growing of nursery stock, thus increasing the list of active nurseries in this state. A list of these nurseries follows.

Greenville Nursery Co., Greenville, S. C.
J. B. Taylor, Greer, S. C.
R. F. Watson, Greenville, S. C.
W. T. Adams, Greenville, S. C.
R. Bates, Jackson, S. C.
C. W. Fogle, Denmark, S. C.
Palmetto Nurseries, Florence, S. C.
Evergreen Nurseries, Conway, S. C.
M. O. Dantzler, Orangeburg, S. C.
Carolina Nursery Company Landrum, S. C.
North Nurseries, North, S. C.
S. E. Ellis, Level Land, S. C.
W. J. Wilson, Pontiac, S. C.

The green house of the several floral companies of this state are inspected periodically, and certificates are issued when necessary. A list of the green houses inspected follows.

Laurens Street Greenhouse, Camden, S. C.
F. F. & F. L. Aichle, Charleston, S. C.
Mrs. J. M. Eison, Columbia, S. C.
Eau Claire Greenhouses, Columbia, S. C.
Chas. A. Moss, Spartanburg, S. C.
Miss Annie Addison, Greenville, S. C.
Mauldin Floral Co., Greenville, S. C.
Greenville Floral Co., Greenville, S. C.
Fants Greenhouse, Anderson, S. C.
The Wales Garden Greenhouse, Columbia, S. C.
Magnolia Floral Co., Charleston, S. C.
Hite Floral Co., Aiken, S. C.

Rose Hill Greenhouse, Columbia, S. C.
Graceland Cemetery, Greenville, S. C.
Charleston Floral Company, Charleston, S. C.

The inspections of the nurseries in this state showed generally a very satisfactory condition. In the course of the year's inspections, mecomatodes were found in three, wooly aphids of apple in two, pecan scab in two, and San Jose Scale in one. Wherever infestation is discovered certificate of this Commission is withheld until the nursery and premises have been cleared. As a further protection it is required that each nurseryman be provided with a fumigating box, approved by the S. C. State Crop Pest Commission, and that all deciduous nursery stock is fumigated in accordance with the requirements.

All certificates issued by this Commission are consecutively numbered and each nurseryman or shipper to whom tags are issued is held accountable to this Commission for their use. Mutilated or unused permit tags are returned. It is required that duplicate invoices of all shipments moving into or within the state be furnished this Commission, showing the kind of stock, the amount, destinations, and also the numbers of the certificates under which shipments are made. These invoices are filed according to a classified system, and enables the inspector of this Commission to promptly determine the distribution of the output of any nursery shipping into or within this state. This is of especial importance whenever an infested shipment is intercepted, because it enables the inspectors to determine other points to which shipments have been made from the same source, and which points are possible or probable centers of infestation.

INTER STATE NURSERY QUARANTINE

Altho there has been a material increase in the number of nurseries in this state and the amount of stock grown, the principle movement of stock continues to be inter state, as is shown by the following list of nurseries arranged alphabetically according to states.

Alabama:—Carol Plantation, Theodore, Ala.

The Eagle Pecan Company, Pittsview, Ala.

Florida:—Commercial Nursery Company, Monticello.

Howard-Hickory Co., Monticello.

Harlan Farms Nursery, Paxton.

Interstate Nurseries, Jacksonville.

J. Van Lindley Nursery Co., Monticello.

W. B. Lamar, Monticello.

Monticello Nursery Co., Monticello

Royal Palm Nurseries, Oneco.
E. E. Stokes, Campville.
Southern Nursery Co., MacLenny.
Simpson Nursery Co., Monticello.

Georgia:—Ashford Park Nurseries, Atlanta.
Born's Pecan Farm and Nursery, McRae.
Concord Nurseries, Concord.
The Cureton Nurseries, Austell.
C. A. Dahl & Co., Atlanta.
Georgia Nursery Co., Concord
Hogansville Nurseries, Hogansville.
Hartwell Nurseries, Hartwell.
LaFayette Nurseries, LaFayette.
Magnolia Nursery, Cairo.
Pecan Grove Farms, Cairo.
Sigmund Tarnok & Co., Inc., Augusta.
Smith Brothers Nursery, Concord.
B. W. Stone Nursery, Thomasville.
Southern Nut Tree Nurseries, Thomasville.
Thomasville Nurseries, Thomasville.

Illinois:—The D. Hill Nursery Co., Dundee.
Vaughn's Seed Store, Western Springs.

Iowa:—Mt. Arbor Nurseries, Shenandoah.
Shenandoah Nurseries, Shenandoah.

Kentucky:—Willadean Nurseries, Sparta.

Massachusetts:—W. W. Edgar, Waverly.
R. & J. Farquar Co., Boston.

Maryland:—Harrison's Nurseries, Berlin.
Loudon Nurseries, Irvington.
The Westminster Nursery, Westminster.
Franklin Davis Nurseries Co., Millikin.

Michigan:—R. M. Kellog Co., Three Rivers.
Mississippi:—Bechtel Pecan Nurseries, Ocean Spring.
The I. E. Bass Pecan Co., Lumberton.

Nebraska:—Sonderregger Nurseries & Seed House, Beatrice.

New Jersey:—Henry A. Dreer, Riverton.

New York:—Kelly Bros. Wholesale Nurseries, Dansville.
T. S. Hubbard Co., Fredonia.
John Lewis Childs, Floral Park.
Guaranty Nursery Co., Rochester.
First National Nurseries, Rochester.

J. G. Mays & Co., Rochester.
H. S. Taylor & Co., Rochester.
Brown Bros. Co., Rochester.
Glen Bros., Inc., Rochester.
Woodlawn Nurseries, Rochester.
L. W. Hall Co., Rochester.

North Carolina—Throneburg Nursery, Newton.
North State Nursery Co., Julian.
Catawba County Nursery, Newton.
Continental Plant Co., Kitterell.
Carolina Nurseries, Burlington.

Ohio:—The Storrs & Harrison Co., Painesville.

Pennsylvania:—The Wm. H. Moon Co., Morrisville.
Andorra Nurseries, Chesnut Hill, Philadelphia.
Thomas B. Meehan Co., Dresher.
J. Franklin Meehan & Son, Mt. Airy.

Tennessee:—Howell Nurseries, Knoxville.
Forest Nursery Co., McMinnville.
Globe Nurseries, Bristol.
Farmers' National Nursery Co., Smithville.
Tennessee Nursery Co., Cleveland.

Bildad Nursery Co., Smithville.
Joe Shadow Nursery Co., Winchester.
Southern Nursery Co., Winchester.
Marble City Nursery Co., Knoxville.
Commercial Nursery Co., Decherd.
Winchester Nursery Co., Winchester.
J. C. Hale Nursery Co., Winchester.
Cedar Hill Nursery Co., Winchester.
Easterly Nursery Co., Cleveland.

Virginia:—Old Dominion Nurseries, Richmond.
Virginia Nurseries, Richmond.

West Virginia:—The Gold Nursery Co., Mason City.

While there has been great reduction in the amount of infested stock shipped into and within the state, the most unsatisfactory feature in nursery quarantine is the fact that it appears to be a common practice for nurserymen to make contracts for certain varieties of stock and when the order is filled other and frequently worthless varieties are substituted, and which is not discovered until the trees come into bearing. There is no provision in the South Carolina Crop Pest Act giving this Commission authority to deal with cases of this kind. This matter has been under discussion by entomologists and nurserymen for some years, and it is difficult

to determine some practical way for overcoming these mal practices. In some states this is best accomplished by the establishment of receiving stations located at strategic points thruout the states, and to which all stock is shipped for final inspection before it proceeds to destination.

PINK BOLL WORM. (*Pectinophera gossypiella*)

Due to the splendid efforts of the Federal Horticultural Board and cotton states co-operating, the pink boll worm has apparently been prevented from spreading the past year. This Commission continued its work begun several years ago in the closest possible co-operation with the Federal Horticultural Board, and consisted of enforcing quarantine regulations as well as in making systematic inspections of the several points within this state which had sometime during the past received cotton seed from pink boll worm infested areas. The quarantine regulations on account of pink boll worm have not been altered during the last year. In enforcing its regulations on account of the pink boll worm, this Commission is guided by the infested, quarantined and regulated areas as defined by the Secretary of Agriculture of the United States from time to time.

In co-operation with the Federal inspectors, the inspectors of this Commission are watching all shipments of a suspicious nature. Systematic inspection of the points which received some of the shipments confiscated by Villa in Mexico in 1914 to 1915, and which have been referred to more fully in previous reports, so far have given no evidence of pink boll worm infestation.

Examination of freight records after discovery of the Louisiana infestation by the Federal Horticultural Board, showed that between 1917 and 1920, materials from infested territories in Louisiana had been shipped to McColl, Jonesville, Arlington, Greer, and Greenville prior to the discovery of the Louisiana infestation. These points have been systematically inspected once every two weeks.

MEXICAN BEAN BEETLE (*Ephilachna corrupta*.)

The Mexican Bean Beetle referred to in our last report, spread with great rapidity during the past year and at the present time occurs in Alabama, Georgia, Tennessee, Kentucky and South Carolina. Due to the wide distribution of this pest and its wide range of food plants, it is believed by quarantine experts that the pest is no longer subject to control by quarantine. The Federal Horticultural Board raised its quarantine on account of the Mexican Bean Beetle effective July 23, 1921, while the quarantine of the South Carolina State Crop Pest Commission was raised October 1, 1921.

Tho this pest has been recorded from several points in Oconee and Pickens counties during the past summer, it has made practically no headway up to this time. We believe however, that this pest will spread rapidly, especially thru the Piedmont section of our state, and will be a pest of great importance in the economy of South Carolina agriculture. The importance of the legume family in southern agriculture cannot be overestimated, especially in South Carolina, which state is now in the transition period from farming under non boll weevil conditions to farming under weevil conditions.

EUROPEAN CORN BORER. (*Pyrausta nubilalis*)

Since our last report the European corn borer has spread over certain territory in Canada and has also entered the state of Ohio. The quarantine regulations adopted by this Commission and published in our last annual report, have not been altered.

THE BROWN TAIL MOTH (*Eupproctris chrysorrhea*) and GYPSY MOTH (*Porthetria dispar*).

Altho these two pests have been in the United States for many years, their spread has been very slow, due to the control work and the quarantine work that has been in effect against them. The Federal Horticultural Board enforced a quarantine regarding all shipments coming from moth areas. In addition to certifying shipments before leaving moth areas, the Federal Horticultural Board notifies the quarantine officials of the various states to which such shipments are made and which enables state officers to have a complete record of such shipments and to make such examination as they desire.

FOREIGN SHIPMENTS.

The past year was noted for the return of the activities in foreign shipments which had completely discontinued during the last year of the world war. The modification of the Federal quarantine to the effect that foreign shipments are inspected at ports of entry is working satisfactorily, and has the advantage of facilitating the transportation of the various shipments and preventing loss at destination points, frequently unavoidable heretofore.

THE SWEET POTATO ROOT BORER (*Cylas formacarius*)

During the past year no material changes took place in the sweet potato root borer situation. The nearest point of its occurrence continues to be Charlton Co., Georgia. Dut to the fact that the main operation of sweet potato movements is inter state and that the predominating portion of the amount of sweet potato slips for planting purposes originates in Georgia and Florida, it is very

necessary that the greatest care be exercised, due to the occurrence of the sweet potato root borer in these states.

Due to the increase and importance of the sweet potato crop in South Carolina agriculture under boll weevil conditions, the introduction of sweet potato root borer into this state would be a great calamity. This insect does its chief damage in the grub stage when it tunnels thru the tubers, making them unfit for use. A list of shippers of sweet potato tubers and seedling plants follows: Florida:—H. J. Bond, Tallahassee.

R. L. Brinson, Ureka.
T. D. Carson, Orlanda.
S. M. Carnes & Son, Florahome.
Dr. R. A. Caswell, Alachua.
J. R. Davis Farms, Bartow.
Dixie Lumber & Veneer Co., Taft.
H. J. Custead, Mannville.
J. E. Fugate, Alchua.
Florahome Plant & Seed Co., Florahome.
The Gordon Plant Co., Hilliard.
H. J. Green, Live Oak.
Havana Plant Farm, Midway.
Hawthorne Plant Farm, Fort Green & Nocatee.
Guy M. Jolly, Hawthorne.
J. E. Kirby, Brooker, Route 2.
J. M. Kite, Hague.
McEachern Bros., Fort Green Springs.
H. Lightfoot, Altoona.
J. F. Laurence, Waldo.
Mizell Evans, Live Oak.
The Maund Farm, Midway.
F. M. Morris, Jr., Wauchula.
W. Frank Malphus, Gainesville, R. 6
G. D. Moore, Hawthorne.
Chas. W. Rogers, Live Oak.
J. W. Staff, Waldo.
Robert Thomas, Brooker.
D. S. Wilkinson, Brooker, R. 2.
Whitby Farm, Tallahassee.
C. W. Waughtel, Clarcona.
T. S. Williams, Starke.

Georgia:—H. S. Boatwright, Alma.

R. J. Brooks, Baxley.
Blakeley Farms, Blakely.
J. R. Batten, Hickox.
J. R. Brigman, Baxley.
Baxley Plant Co., Baxley.

Supplementary Reports

D. M. Barber, Baxley.
A. V. Brown, Douglas.
H. & R. Ballad, Pavo.
J. H. Crisp, Fender.
Clark Plant Co., Thomasville
J. B. Crane Plant Co., Dixie.
E. A. Cauthen, Fender.
R. B. Conder, Tifton.
Casper Hide & Skin Co., Fitzgerald.
Coleman Plant Co., Tifton.
Carlisle Seed & Plant Co., Valdosta.
J. R. Cauthen, Tifton.
N. F. Carden, Hatley.
Cordele Plant Co., Cordele.
E. E. Carter, Hazelhurst.
Dent & Flanders, Ocilla.
H. H. Daniel, Hagan.
Dorris Plant Co., Valdosta.
H. H. Dean, Baxley.
J. A. Dasher Plant Co., Valdosta.
Z. C. Dismuke, Mystic.
The Davis Plant Co., Tifton.
Economy Plant Co., Tifton.
J. K. Exum, Milltown.
Mrs. Addie Evans, Graham.
Elton Plant Co., Lumber City.
Fasset Plant Co., Baxley.
P. D. Fulwood, Tifton.
Farmers Co-op Plant Co., Fort Midge.
W. N. Gantt, Hazelhurst.
E. A. Godwin, Lenox.
Wm. C. Geraty Co., Tifton.
S. E. Hollis, Baxley.
B. J. Head, Alma.
J. E. Hunt, Seville.
O. L. Harris & Co., Cordele.
Thomas D. Henshaw, Piedmont College, Demorest.
Ingram & Co., Jesup.
G. N. Jones, Aashburn.
Jenkins Plant Co., Sumner.
The Jefferson Farms, Albany.
Jackson & Co., Alma.
Kinsey Wholesale Plant Co., Valdosta.
J. E. King, Howell, R. 1.
Dr. E. A. Lambert, Denton.
W. W. Lindsay, Pavo.
J. R. McClellon, Rockingham.

Brooks County Plant & Truck Farm, Barnwick.
W. T. Mitchell, Folkston.
B. B. Medders, Rockingham.
Manson Plant Co., Valdosta.
Outlaw Plant Co., Hahira.
J. F. Owens, Valdosta, R. 2.
H. E. Parrish, Moultrie.
Parker Farms, Moultrie.
O. P. Parrish, Clyattville.
Powell Plant Co., Thomasville.
Pitts & Clemmons, Pavo.
Piedmont Plant Co., Albany.
Pavo Plant Co., Pavo.
T. N. Paris, Fitzgerald.
O. H. Pinson, Sylvester.
Webb's Stock & Plant Farm, Pavo.
J. D. Stewart, Quitman.
N. L. Willet Seed Co., Augusta.
H. D. Salter, Pitts.
Shipp Plant Co., Cordele.
F. F. Stokes, Fitzgerald.
Seminole Nurseries, Tifton.
Seaside Farms, Tifton.
South Georgia Plant Co., Alma.
R. A. Strange, Darian.
T. Pinson Stanley, Quitman.
Staunton Farms, Lenox.
Southern Nut Tree Nurseries, Thomasville.
R. B. Sumner, Tifton.
J. U. Sewell, Tifton.
Shoer Plant Co., Valdosta.
Sexton Plant Co., Valdosta.
Potato Curing & Storage Co., Helena.
Southern Plant Co., Tifton.
Ty Ty Produce & Plant Co., Ty Ty.
Tifton Potato Co., Tifton.
Thomasville Plant Co., Thomasville.
C. B. Varner, Ty Ty.
A. Winslow, Demorest.
J. O. Walker, Sycamore.
James Williams, Coffee.
H. L. Williams, Baxley.
D. M. White, Baxley.
T. W. Wrench, Folkston.
C. W. White, Hazelhurst.
C. W. Waughtel, Homeland.

BOLL WEEVIL (*Anthonomus grandis*.)

Due to the three comparatively mild winters and two moist summers, the cotton boll weevil developed practically unchecked by natural factors. This pest developed full strength over the southern part of the state as far north as a line running akimbo from Aiken to Horry counties. The insect had every thing in its favor, and had it developed full strength over the central and northern part of the state during the past season the losses in those sections would have been much greater. The weather conditions were extremely adverse to poisoning operations during 1921, and the result secured from these operations in the heavy weevil belt of this state were generally unsatisfactory. From the evidence at hand obtained thru experiments in other sections of the South, it would appear that the weather conditions was the determining factor in poisoning operation in 1921, and it is believed that weevil poisoning is profitable in this state when the work is properly done under favorable weather conditions on high yielding land. Should the winter of 1921-22 be comparatively mild with moisture conditions during the growing season, resembling those of the past year, then very severe boll weevil damage may be expected over a greater part of the state in 1922. It must be remembered that insects are "animals of the weather," and that this is very emphatically true in regard to the boll weevil. While a mild winter followed by a moist growing season would be very favorable to the pest and enable it to develop great destructiveness, yet a cold winter followed by a dry growing season would have the reverse effect and reduce the pest to a minimum.

ARGENTINE ANT (*Iridomyrmex humilis*.)

So far as we are able to determine, this pest has not spread beyond Charleston, but since our last annual report it has spread over more territory in and about the city of Charleston. Among American ants this is the most destructive species, on account of its cosmopolitan habits, its size, and social organization. This pest appears to be originally a grave infesting species, and it may be distributed from one place to another in shipments of dead bodies transported for burial. Efforts are now being made by another section of this division to launch a campaign aimed at eradication.

MOLE CRICKET (*Scapteriscus* Sp.)

The Porto Rican Mole Cricket, previously reported as having become destructive in the vicinity of Charleston, is spreading along the coast of South Carolina, and is also getting foothold at several points in the state.

This insect is being studied in co-operation with the Bureau of Entomology, with W. A. Thomas, of the Bureau of Entomology,

in charge. Mr. Thomas has his headquarters at Chadbourn, N. C., giving his attention to several serious pests along our coast. While this pest would not be subject to quarantine measures, yet experimental work aimed at its control is developing promisingly.

COTTONY CUSHION SCALE (*Icerya purchasi*.)

This pest has not spread beyond Charleston, and at this time is well under control, due to the introduction of Australian Lady Bird Beetles obtained from the State Plant Board of Florida, Gainesville, Florida.

THE STRIPED PEACH WORM. (*Gelechia confusella*).

A specimen of the striped peach worm was sent to us for identification from Columbia, S. C. This was the only specimen observed, and as it is not a new pest in the United States it is unlikely that it will give us serious trouble.

VELVET BEAN CATERPILLAR (*Anticarsia gemmatilis*.)

This insect, which has already been destructive in the state of Florida, is migrating northward, and it will only be a matter of time when it will cross the Savannah River and enter the state of South Carolina. As an enemy of the velvet bean this insect requires the most serious consideration and great vigilance is practiced by this Commission in the southern counties so that its first appearance in the state may be quickly detected.

DISEASE OUTBREAKS

There have been no wide-spread out-breaks of new or troublesome diseases in the state during the year. Some of the diseases which occasionally appear as epidemics have developed and caused serious losses in some sections of the state. During the latter part of the summer, quite a serious outbreak of bean bacterial blight and bean anthracnose developed in Berkeley County. Since bean growing is a new industry in this section, and these diseases have never occurred here before, it seems safe to assume that they were brought in this case on the seed. The sources of the seed are still being investigated and every effort being made to prevent the introduction of diseased seed next year.

SWEET POTATO DISEASES.

The fungous diseases of sweet potatoes are still causing serious losses in the sections where sweet potatoes are grown commercially. The practices which have developed within recent years of buying plants from growers, rather than the individual growers bedding their own stock and producing plants to meet their needs, has resulted in some of the diseases becoming rather wide-spread. In order to protect the people who buy slips and plants, the Commission

has enforced regulations prohibiting the sale and shipment of sweet potato plants which are known to be diseased. During the past year, over ten thousand (10,000) bushels of potatoes have been inspected by the pathologists of the Commission, either in the potato houses or at bedding time. Large numbers of plant beds have been examined and where the potatoes and plants were found free from disease, permit tags have been issued to the growers. These tags must be attached to the packages of plants before they can be shipped by freight, express, or mail. This inspection service has already resulted in growers securing better plants, and in many cases where black rot and other sweet potato diseases have caused serious damage in the past, the fields have been comparatively free from disease this year. There are some diseases of sweet potatoes which have not yet appeared in South Carolina, and it is hoped by strict enforcement of these regulations to keep such diseases as "wilt" and "soil rot" from gaining a foothold in South Carolina.

COTTON DISEASES.

In order to prohibit the sale and distribution of cotton seed which are infected with anthracnose, wilt, or other communicable diseases, the Commission is continuing the policy adopted several years ago of preventing the sale and distribution of seed infected with these diseases. Inspections have been made in the field and laboratory tests have been made of various samples to determine whether or not the seed were diseased, and the usual number of tags have been issued to growers whose seed were free from disease.

CABBAGE AND TOMATO DISEASES.

The growing of cabbage and tomato plants for sale to gardeners and truckers has become quite a large business in this state and some of the adjoining states, and since such diseases as cabbage yellows, tomato wilt, tomato leaf blight, and black rot of cabbage, as well as other diseases are frequently carried into gardens and trucking areas on the plants, regulations have been formulated prohibiting the sale or shipment of cabbage and tomato plants unless they are known to be free from disease. Careful inspections are made of the plant beds where these plants are being grown commercially, and if the plants are found free from disease, permits are issued for their shipment.

The regulations adopted by this Commission governing the transportation of cabbage plants are appended to this report.

DUTIES OF THE COMMISSION AS DEFINED BY THE LEGISLATURE.

The duties of this Commission as defined by the General Assembly of South Carolina, in the Crop Pest Act of 1912, are confined to the prevention of the introduction and the spread of injurious diseases and insects into and within this state. The obligations of the Commission are confined to matters relating to quarantine, and no authority is provided for dealing with violations of contracts that do not constitute a public nuisance or public danger. It appears that nurseries and other dealers in plants frequently substitute varieties other than those specified in the order. It furthermore appears that the furnishing of seedlings instead of grafted or budded stock is another mal practice. This Commission refuses to deal with such matters as these when requested to do so, as these duties were not intended in the provisions of the Crop Pest Act.

The introduction of a serious insect pest or plant disease may be expected to result in wide spread infestation, and serious losses, thus constituting a public nuisance or public danger. Violations of contracts pertaining to seedlings, varieties or physical conditions of the trees affect the buyer and seller only, but do not constitute a public nuisance. Whenever it should become desirable that these matters be handled by this commission it will be necessary to provide further powers by the General Assembly.

Quarantine laws and regulations, have for a number of years been created and operated along well established and general lines of procedure. With few exceptions their effectiveness depended to a great extent at least on the educational and co-operative attitude of our citizens. The laws and regulations seem to contain perforations thru which the man with unscrupulous intentions can escape. This matter is further complicated, owing to the inability of the average individual to detect an infestation or to determine whether his plants are seedlings, while the varieties are generally not determined until bearing time. To secure redress after such a long lapse of time is fraught with difficulties, especially when the seller does not live within this state. It has been suggested that out of state sellers give power of attorney to acceptable citizens in the locality where the stock is sold and planted, and against whom proceedings may be instituted, in case of violations. The penalties or damages provided, unless sufficiently large, would not be an inducement for the offender to discontinue his mal practices.

Among the states where the most definite results are being secured in quarantine work are Florida and Mississippi. The Receiving Stations established in these states are outstanding features of their effective service and enables inspectors to see the stock before it proceeds to final distinction. The fact that such a progres-

siye state as Mississippi found 16 per cent of the parcel-post shipments that came into the state during the past year infested with insects or diseases, shows not only the value of such service, but may be regarded as an index of what may go by ordinary quarantine service undetected.

It is furthermore recommended that the establishment of Receiving Stations be seriously considered in our next step, looking toward the betterment of our service.

The work of this Commission has heretofore been prosecuted in the closest co-operation with the Extension and Research Divisions of this college. While each section has its own definite duties to perform,, this co-operation is of the greatest value, because it keeps the various branches of the service well informed as to the current and future needs of our people.

Respectfully submitted,

A. F. CONRADI,
State Entomologist.

H. W. BARRE,
State Pathologist.

SOUTH CAROLINA STATE CROP PEST COMMISSION

Clemson College, S. C.

REGULATIONS GOVERNING THE TRANSPORTATION OR MOVEMENT OF TOMATO PLANTS.

Reg. 1. H. The transportation into the within the state of South Carolina of tomato plants for planting purposes is prohibited unless such shipments are accompanied by a permit of the South Carolina State Crop Pest Commission.

Reg. 2. H. These permits are issued after satisfactory evidence has been obtained either through acceptable affidavit or a certificate issued by a competent inspector, stating that these plants and the premises upon which they were grown were inspected by a competent inspector and found to be apparently free from wilt and other dangerous diseases and insects.

These regulations are effective on and after February 15, 1921.

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SOUTH CAROLINA STATE CROP PEST COMMISSION**Clemson College, S. C.****REGULATIONS GOVERNING THE TRANSPORTATION OF CAB-
BAGE PLANTS FOR PROPAGATING PURPOSES INTO AND
WITHIN THE STATE OF SOUTH CAROLINA**

Reg. 1. I. The transportation into and within the state of South Carolina of cabbage plants for planting purposes is prohibited unless accompanied by a permit of the South Carolina State Crop Pest Commission.

Reg. 2. I These permits are issued after satisfactory evidence has been obtained either through acceptable affidavit or a certificate issued by a competent inspector, stating that these plants and the premises upon which they were grown were inspected by a competent inspector and found to be apparently free from wilt and other dangerous diseases and insects.

These regulations are effective on and after February 15, 1921.

Report of The State Veterinarian

FOR FISCAL YEAR 1920-21.

To Live Stock Sanitary Board,

Through President W. M. Riggs,

Gentlemen:

I have the honor to submit herewith a report of the Clemson College Live Stock Sanitary Office and the Bureau of Animal Industry, U. S. Department of Agriculture, cooperating, in the State of South Carolina, covering the period from January 1, 1921, to October 31, 1921, inclusive.

While the functions of this office are generally understood, it may not be amiss to state that in addition to conducting Tick Eradication, Tuberculosis Eradication and Hog Cholera Control, we also investigate, treat and recommend measures for the control and eradication of all reported outbreaks of contagious, infectious and communicable diseases of live stock.

TICK ERADICATION.

Our work under this project is still confined principally to the counties in the coast region. In former reports we have referred to the adverse conditions encountered in the coast counties where the cattle are permitted to roam at will in the "free range areas" and it being a difficult matter, and in many instances impossible, to get all of the cattle disinfected regularly.

We had to conduct the work in the coast counties this year in the same manner as we have in the past, for we had the same unfavorable conditions to confront us, however, satisfactory progress was made.

In addition to the work in the coast counties, we also conducted "final" or "clean-up" work in the counties of Aiken, Clarendon, Edgefield, Fairfield, Florence, Kershaw and Richland. A few quarantined premises in these counties were inspected regularly, to be such they were absolutely free from ticks. The work will be practically completed in most of these counties this year.

We have referred in former reports to the great losses, both actual and potential, the farmers in our state have sustained each year on account of the cattle fever tick and the results that would be obtained when the tick was eradicated.

In this connection, as evidence of the results obtained, please permit me to remark upon the large and magnificent display of South Carolina raised cattle, both beef and dairy types, that those who were fortunate enough to attend our 1921 State Fair, had the pleasure of inspecting. The splendid specimens of the various breeds was in reality a revelation of the wonderful possibilities for cattle raising in our State, and should dispel for all time the doubt that has been entertained by some that "you can't raise good cattle in South Carolina"; well, you can not unless you first eradicate the cattle tick. As the ticks go out, good cattle come in.

TUBERCULOSIS ERADICATION.

This branch of our work has been vigorously prosecuted during the past year with excellent results, and is being conducted not only to eradicate tuberculosis from the live stock of our State, but the establishment of Tuberculosis Free Accredited Herds.

The tuberculin test was applied during the past year to 804 herds containing 17,377 cattle, 253 of which reacted to the test and were disposed of in accordance with the State laws.

Since the work was inaugurated (November, 1917, the tuberculin test has been applied to a total of 1,579 herds containing 35,512 cattle, 632 of which reacted to the test.

We now have in the State 66 Accredited Herds containing 2,304 cattle; 463 herds containing 6,755 cattle that have passed one successful test and are in process of Accreditation; and a total of 580 herds, containing 10,957 cattle, under our supervision.

The eradication of tuberculosis from our live stock is of paramount importance not only from an economic but a public health standpoint as well. While the tuberculin testing of cattle is not compulsory, yet every breeder and every dairyman should feel that he is morally obligated to maintain a tuberculosis free herd, and this office will assist him in the fulfilling of this obligation so far as our means will permit.

That the importance of tuberculosis eradication is recognized, permit me to quote a resolution that was unanimously adopted by the South Carolina Live Stock Association at its annual meeting held in Columbia, S. C. on October 25, 1921:

HOG CHOLERA CONTROL.

Hog Cholera is the most common as well as the most fatal disease of hogs. While the disease is most prevalent in the eastern and southern counties, yet it is found in practically every county in the State during the past year.

The vaccination of hogs to protect them against cholera is now being done chiefly by veterinarians under the supervision of this office, and in order that their services may be readily available we

have our veterinarians stationed at the following points, viz: Alledale, Blackville, Ridgeland, Walterboro, St. Matthews, Orangeburg, Kingstree, Georgetown, Marion, Conway and Columbia

During the past year the veterinarians of this office, county agents and laymen working under the supervision of this office, have treated hogs against cholera, as follows:

| | | |
|----------------------------------|--------|------|
| Serum alone | 1,706 | head |
| Serum and virus | 42,054 | " |
| Serum and bacterins | 329 | " |
| Serum, virus and bacterins | 4,691 | " |
| Bacterins alone | 1,109 | " |
| <hr/> | | |
| Total | 49,888 | " |

INVESTIGATION OF OTHER DISEASES.

We answer numerous calls to all sections of the State to investigate other diseases of live stock that appear to be contagious or infectious. During the past year our veterinarians have investigated the following diseases, some of which are not contagious or infectious:

CATTLE

Hemorrhagic Septicemia, 36; blackleg, 10; botulism, 10; parasitism, 5; rabies, 4; infectious abortion, 4; actinomycosis, 1; streptococic mastitis, 2; white scours, 1; sarcoma, 1; metritis, 5; stomatitic, 4; parturient paresis, 2; poisoning, 4; pericarditis (traumatic), 3; pneumonia, 1; malnutrition, 4; mammitis, 5; toxemia, 2; dietetic, 27; gastro enteritis, 1; peritonitis, 1; injuries, 6; impaction of rumen, 3; laminitis, 2; laryngitis, 2; bronchitis, 2; gastritis, 1.

SWINE

Cholera, 411; hemorrhagic septicemia, 27; mixed infection, 15; pneumonia, 20; parasitism, 66; botulism, 10; rabies, 2; tuberculosis, 1; necrotic enteritis, 4; necrobacillosis, 3; dermatitis, 1; peritonitis, 6; dietetic, 29; malnutrition, 13; infectious abortion, 4; rheumatism, 4; poisoning, 5; paralysis, 4; urticaria, 4; metritis, 1

HORSES AND MULES

Botulism, 5; pneumonia, 7; parasitism, 3; rabies, 1; azoturia, 1; chronic coryza, 6; urticaria, 2; dietetic, 7; eczema, 1; lymphangitis, 1; melanosis, 1.

SHEEP AND GOATS.

Parasitism, 3; malnutrition, 1; congestion of lungs, 1.

DOGS

Rabies, 4; black tongue, 4.

Our veterinarians are frequently consulted by the live stock owners in matters pertaining to the raising and handling of live stock and gladly render assistance in such cases. They also make voluntary visits to, and sanitary surveys of, farms where they suspect the live stock to be diseased, and keep in close touch with the development of the live stock industry in general. During the past year their activities in this connection are shown as follows:

| | |
|------------------------------------|-------|
| Consultations and interviews | 9,322 |
| Investigations on call | 3,114 |
| Sanitary surveys | 1,136 |
| Farms visited | 4,250 |

Valuable information pertaining to diseases and the care and handling of live stock is disseminated through the medium of bulletins, pamphlets, etc., from the Columbia office, also numerous inquiries concerning live stock diseases are answered by letter.

SERUM, VIRUS AND BIOLOGICS DISTRIBUTION

In order to better serve the interests of the live stock owners, the Clemson College Live Stock Sanitary Office maintains an equipment for carrying large stocks of Anti-Hog Cholera Serum, Virus and Biologics, and furnishes these products to the citizens of the State at cost, thereby effecting a saving to them of several thousands of dollars annually.

Our location is such that prompt deliveries can be made to any section of the State. During the past year this office has distributed Serum, Virus and Biologics, as follows:

| | Mils | Value |
|------------------------------|---------------------|-------------------|
| Anti-Hog Cholera Serum | 2,930,275..... | \$35,929.33 |
| Hog Cholera Virus | 128,185..... | 1,591.04 |
| *Biologics | 29.467 (doses)..... | 2,924.86 |
| Syringes, etc. | | 280.52 |
| Total | | <hr/> \$40,725.75 |

* The biologics distributed from this office are used for the prevention of hemorrhagic septicemia (cattle and swine), mixed infection (swine), and black leg (cattle).

DEPUTY STATE VETERINARIANS.

The demands made upon the Columbia office for veterinarians to investigate reported outbreaks of contagious and infectious diseases increased to such an extent during the past year we frequently did not have men to answer all calls promptly, and as it is our desire to protect the live stock industry of the state by rendering prompt service, plans were approved by the Board of Trustees of Clemson Agricultural College whereby the practicing veterinarians of the State were deputized so as to assist this office in the control and eradication of contagious and infectious diseases of live stock. As a result of this arrangement, twenty-six (26) practicing veterinarians were commissioned as Deputy State Veterinarians, effective July 1, 1921. These veterinarians are located principally in the upper and eastern sections of the State, and with the Assistant State Veterinarians being located in the southern and middle sections of the State, we now have a force of trained men located at advantageous points over the entire State and are in position to render prompt and efficient service.

COLUMBIA LABORATORY.

One of the most important developments in connection with our live stock sanitary work during this year was the establishment of our laboratory. We have long felt the need for this equipment, as we not infrequently meet with conditions that require either a bacteriological or pathological examination to properly diagnose the case. In the past we have had to send such specimens to laboratories located in the larger cities and it would be several days or weeks before we would receive a report of the examination. This was very unsatisfactory and in some instances meant a great loss to the live stock owners. Now we are in position to handle such cases in our Columbia laboratory in the shortest possible time.

We are very fortunate to have associated with us a veterinarian who has had special training and extensive experience in laboratory work and in addition to the work in the Columbia office we will conduct parasitic research work in various sections of the State, as we have found that practically all of our live stock are infested to a greater or less extent with various species of parasites that cause a great economic loss annually.

The Clemson College Live Stock Sanitary Office is now in position to render a service to the live stock industry of the State in keeping with its development and it is our desire to maintain this service to the highest degree of efficiency.

STATE WIDE STOCK LAW

In our Tick Eradication work during the past few years in the coast region, one of the greatest obstacles to the completion of the work was the prevailing custom of permitting live stock to run at large. This condition exists to a greater or less extent in all the coast counties; and it is impossible to get all of the cattle disinfected regularly, consequently an area freed of ticks one year would become reinfested, therefore, it has been necessary to continue dipping year after year with no great degree of progress or satisfaction. A remedy to this condition, however is now in sight. The State Wide Stock Law Act, as passed by the 1921 General Assembly, that becomes effective January 1st, 1922, is a most important piece of legislation, and with proper observance will not only be of great assistance to us in completing our tick eradication work and controlling the spread of hog-cholera infection, but it will be the means of controlling the breeding of our live stock and thereby enable us to improve the quality and raise a better class than at present, that will not only be more profitable but a pleasure as well.

And while the confining of live stock to one's own premises may at first be an inconvenience to some, yet within a short time the improved conditions resulting therefrom will be so marked that those that are now not in favor of the State-Wide Stock Law will be, and would not revert to the old order under any circumstances.

TICK ERADICATION**U. S. Bureau of Animal Industry Expenditures.**

| | Salaries: | Incidentals: | Total |
|---|-------------|--------------|-------------|
| January 1, 1921, to | | | |
| October 31, 1921, inclusive— | \$21,912.37 | \$8,847.19 | \$30,759.56 |
| Salaries—Expenditures under this heading include salaries of supervising veterinarians, a clerk and cattle inspectors. | | | |
| Incidentals—Expenditures under this heading include traveling expenses of supervising veterinarians, cattle inspectors and maintenance of office in Columbia, South Carolina. | | | |

TICK ERADICATION**State Expenditures**

| | Salaries: | Incidentals: | Total |
|---|-------------|--------------|-------------|
| January 1, 1921, to | | | |
| October 31, 1921, inclusive— | \$15,644.68 | \$429.12 | \$16,073.80 |
| Salaries—Expenditures under this heading include salaries of cattle inspectors and one clerk. | | | |

Incidentals—Expenditures under this heading include chemicals (for preparing arsenical solution to disinfect cattle), utensils and containers for same, printing regulations, quarantine and permit books, disinfection notices, etc.

The following statement shows expenditures from various sources from 1907 to October 31, 1921, inclusive:

Expenditures for Tick Eradication in South Carolina.

| Year | U. S. Dept. of Agri. | Clemson College | State Appropri'n | County Appropri'n |
|-------------------|-------------------------|--------------------|---------------------|----------------------|
| 1907 | \$ 5,125.00 | \$ 1,860.00 | \$ | \$ |
| 1908 | 15,207.00 | 4,535.00 | ..... | ..... |
| 1909 | 19,367.00 | 8,524.00 | ..... | ..... |
| 1910 | 15,915.00 | 9,960.00 | ..... | ..... |
| 1911 | 12,674.00 | 10,051.00 | ..... | ..... |
| 1912 | 14,537.00 | 8,308.00 | ..... | ..... |
| 1913 | 16,146.00 | 9,369.00 | ..... | 1,083.00 |
| 1914 | 23,143.00 | 1,497.00 | 30,000.00 | ..... |
| 1915 | 35,479.84 | ..... | 30,000.00 | ..... |
| 1916 | 38,598.72 | ..... | 30,000.00 | ..... |
| 1917 | 64,811.65 | ..... | 30,000.00 | ..... |
| 1918 | 74,102.77 | ..... | 30,000.00 | ..... |
| 1919 | 63,947.29 | ..... | 30,000.00 | ..... |
| 1920 | 35,650.36 | ..... | 20,000.00 | ..... |
| 1921 (To Oct. 31) | 30,759.56 | ..... | 16,073.80 | ..... |
| Total | \$465,464.19 | \$54,104.00 | \$216,073.80 | \$1,083.00 |

LIVE STOCK SANITARY CONTROL WORK.

U. S. Bureau of Animal Industry Expenditures.

Salaries: Incidentals: Total:

January 1, 1921, to

October 31, 1921, inclusive— \$8,634.95 \$3,269.02 \$11,903.97

Salaries—Expenditures under this heading include salaries of four veterinariary inspectors and one clerk.

Incidentals—Expenditures under this heading include traveling expenses of vetinary inspectors, office rent, telephone charges, etc.

LIVE STOCK SANITARY CONTROL WORK

State Expenditures.

Salaries: Incidentals: Total:

January 1, 1921, to

October 31, 1921, inclusive— \$27,479.37 \$10,517.56 \$37,996.93

Salaries—Expenditures under this heading include salaries of Veterinarians and Assistants to Veterinarians.

Incidentals—Expenditures under this heading include traveling expenses of veterinarians, office rent, etc.

LIVE STOCK SANITARY CONTROL WORK.

The following statement shows expenditures from the year 1918 to October 31, 1921, inclusive:

| Year | U. S. Dept. of Agri. | State Appropriation | Total |
|----------------------------|-------------------------|------------------------|--------------|
| 1918 | \$ 3,243.81* | \$ 1,879.44 | \$ 5,123.25 |
| 1919 | 7,418.80* | 9,954.50 | 17,373.30 |
| 1920 | 13,325.56 | 30,000.00 | 43,325.56 |
| 1921 (To Oct. 31, inc.) .. | 11,903.97 | 37,996.93 | 49,900.90 |
| Total | \$35,892.14 | \$79,830.87 | \$115,723.01 |

* These amounts do not include the United States Department of Agriculture's expenditures in hog cholera work in South Carolina for the year 1918, or the first nine months in 1919, as this office has no record of the expenditures made by the United States Department of Agriculture for hog cholera control work in South Carolina prior to October 1, 1919.

FORCE IN LIVESTOCK SANITARY WORK

(Paid jointly by State of South Carolina and U. S. Dept. of Agriculture.)

| Title and Name: | Total Salary | From S. C. Appropri'n | From Federal Appropri'n |
|--|------------------|--------------------------|----------------------------|
| State Veterinarian—W. K. Lewis | \$3710.00 (year) | | \$1870.00 |
| Asst. State Veterinarian—J. H. Rietz | 3000.00 " | 3000.00 | |
| Veterinary Inspector—Z. C. Boyd | 2160.00 " | | 2160.00 |
| Veterinary Inspector—P. J. Gallagher | 2100.00 " | | 2100.00 |
| Veterinary Inspector—Clarke Hedley | 2100.00 " | | 2100.00 |
| Veterinary Inspector—F. S. Hope | 2100.00 " | | 2100.00 |
| Asst. State Veterinarian—M. L. Boyd | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—H. S. Brundage | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—E. T. Fisher | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—H. B. Hood | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—R. A. Mays | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—W. D. McCormack | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—E. W. McCrone | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—F. K. Peterson | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—M. T. Seay | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—S. D. Shoulkin | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—S. M. Witherspoon | 2000.00 " | 2000.00 | |
| Asst. State Veterinarian—Emeln Wood | 2000.00 " | 2000.00 | |
| Veterinary Inspector—L. S. Baer | 1800.00 " | | 1800.00 |
| Veterinary Inspector—A. J. Wahn | 1800.00 " | | 1800.00 |
| Veterinarian Inspector—J. R. Urich | 1680.00 " | | 1680.00 |
| Clerk—George Smith | 1680.00 " | | 1680.00 |
| Clerk—R. K. Donly | 1600.00 " | 1600.00 | |

| | | | |
|---|---------|---|---------|
| Clerk (Steno-type)—Margaret Robertson | 1300.00 | " | 1300.00 |
| Agent in Tick Erad.—S. H. Williams | 1800.00 | " | 1800.00 |
| Agent in Tick Erad.—W. F. Gaillard | 1740.00 | " | 1740.00 |
| Agent in Tick Erad.—V. E. McCormack | 1620.00 | " | 1620.00 |
| Agent in Tick Erad.—J. D. Limehouse | 1440.00 | " | 1440.00 |
| Agent in Tick Erad.—Wade H. Jones | 1380.00 | " | 1380.00 |
| Agent in Tick Erad.—M. B. Marvin | 1260.00 | " | 1260.00 |
| Agent in Tick Erad.—W. M. Barnwell | 1080.00 | " | 1080.00 |
| Agent in Tick Erad.—G. S. Cuthbert | 1080.00 | " | 1080.00 |
| Agent in Tick Erad.—J. E. Gillis | 1080.00 | " | 1080.00 |
| Agent in Tick Erad.—W. H. Harrison | 1080.00 | " | 1080.00 |
| Agent in Tick Erad.—A. A. Patterson, Jr. | 1080.00 | " | 1080.00 |
| Agent in Tick Erad.—E. E. Wyndham | 1080.00 | " | 1080.00 |

| Title and Name: | Total Salary | From S. C. Appropri'n | From Federal Appropri'n |
|--|------------------|--------------------------|----------------------------|
| Asst. to Veterinarians—J. E. Bailey | \$1320.00 (year) | \$1320.00 | |
| Asst. to Veterinarians—William Bivens | 1200.00 | 1200.00 | |
| Asst. to Veterinarians—G. W. Hill | 1440.00 | 1440.00 | |
| Asst. to Veterinarians—J. C. Hoats | 1320.00 | 1320.00 | |
| Asst. to Veterinarians—E. J. Jenkins | 1440.00 | 1440.00 | |
| Asst. to Veterinarians—J. C. Kinsey | 1440.00 | 1440.00 | |
| Asst. to Veterinarians—J. K. Linder | 1200.00 | 1200.00 | |
| Asst. to Veterinarians—Theo Malphrus | 1200.00 | 1200.00 | |
| Asst. to Veterinarians—A. G. Mitchum | 1320.00 | 1320.00 | |
| Asst. to Veterinarians—J. M. Rowell | 1200.00 | 1200.00 | |
| Asst. to Veterinarians—H. N. Sessions | 1440.00 | 1440.00 | |
| Asst. to Veterinarians—W. B. Skilling | 1200.00 | 1200.00 | |
| Asst. to Veterinarians—C. C. Strobel | 1200.00 | 1200.00 | |
| Asst. to Veterinarians—G. F. Sullivan | 1200.00 | 1200.00 | |
| Asst. to Veterinarians—F. H. Worthington.... | 1440.00 | 1440.00 | |
| Cattle Inspector—A. M. Addison | 1200.00 | 1200.00 | |
| Cattle Inspector—M. C. Butler | 1200.00 | 1200.00 | |
| Cattle Inspector—G. S. Clark | 1200.00 | 1200.00 | |
| Cattle Inspector—H. D. Crosby | 1200.00 | 1200.00 | |
| Cattle Inspector—S. P. Elliott | 1200.00 | 1200.00 | |
| Cattle Inspector—E. E. Easterlin | 1200.00 | 1200.00 | |
| Cattle Inspector—W. D. Gregorie | 1200.00 | 1200.00 | |
| Cattle Inspector—T. B. Hay | 1200.00 | 1200.00 | |
| Cattle Inspector—D. H. Heyward | 1200.00 | 1200.00 | |
| Cattle Inspector—R. H. Hudson | 1200.00 | 1200.00 | |
| Cattle Inspector—J. J. Jackson | 1200.00 | 1200.00 | |
| Cattle Inspector—L. C. Lachicotte Jr. | 1200.00 | 1200.00 | |
| Cattle Inspector—C. O. McCormack | 1200.00 | 1200.00 | |
| Cattle Inspector—W. H. McKie | 1200.00 | 1200.00 | |
| Cattle Inspector—W. H. McNeill | 1200.00 | 1200.00 | |
| Cattle Inspector—J. H. Marvin, Sr. | 1200.00 | 1200.00 | |
| Cattle Inspector—J. M. Oliver | 1200.00 | 1200.00 | |
| Cattle Inspector—A. J. Richardson | 1200.00 | 1200.00 | |
| Cattle Inspector—W. T. Rowell | 1200.00 | 1200.00 | |
| Cattle Inspector—E. M. Seabrook, Jr. | 1200.00 | 1200.00 | |
| Cattle Inspector—O. A. Speights | 1440.00 | 1440.00 | |
| Cattle Inspector—B. H. Vereen | 1200.00 | 1200.00 | |
| Cattle Inspector—B. L. Walpole | 1200.00 | 1200.00 | |
| Cattle Inspector—W. C. Walker | 1200.00 | 1200.00 | |

Supplementary Reports

| Title and Name: | Total | From S. C. | From Federal |
|--|----------------|------------|--------------|
| | Salary | Appropri'n | Appropri'n |
| Cattle Inspector—L. M. Alsbrooks | 5.00 (day) | \$ 5.00 | |
| Cattle Inspector—B. A. DuBois | 1200.00 (year) | 1200.00 | |
| Cattle Inspector—I. E. Eagerton | 5.00 (day) | 5.00 | |
| Cattle Inspector—H. C. Gore | 50.00 (month) | 50.00 | |
| Cattle Inspector—L. P. Hardwick | 50.00 " | 50.00 | |
| Cattle Inspector—E. J. Hotchkiss | 5.00 (day) | 5.00 | |
| Cattle Inspector—F. M. Johnson | 5.00 " | 5.00 | |
| Cattle Inspector—R. K. Johnson | 5.00 " | 5.00 | |
| Cattle Inspector—James H. Pepper | 100.00 (month) | 100.00 | |
| Cattle Inspector—J. E. Williams | 5.00 (day) | 5.00 | |
| *Clerk—J. E. Wilson | 1800.00 (year) | 1800.00 | |
| *Clerk—J. M. Leaphart | 1200.00 " | 1200.00 | |
| **Veterinary Inspector—M. G. Smith | 1500.00 " | | \$1500.00 |

*J. E. Wilson and J. M. Leaphart, clerks, are paid out of Hog Cholera Control Reinvestment Fund.

**M. G. Smith, veterinary inspector, is also paid part salary by Orangeburg County.

Note: Most of the Assistants to Veterinarians and Cattle Inspectors are employed for only a portion of the year. They pay their own traveling expenses.

Respectfully submitted,

W. K. LEWIS,

Inspector in Charge and State Veterinarian.

No. 45.---Interim Report To The Committee in re Clemson Agricultural College For The Investigating Staff.

Scope of Activities:

Clemson Agricultural College is not merely a state supported institution of higher learning, as is believed by many well informed intelligent people of the state, but carries on very diverse activities, some only remotely related to educational work as the term is usually interpreted. The principal activities of the institution may be roughly classified as follows:

1. Work of College Proper. This consists of instruction in engineering, agricultural, and textile work and in other subjects usually taught in a technical school.

2. Research Work: This consists of experimental and other research work, especially in agriculture, for the purpose of discovering facts and principles hitherto unknown and of disseminating them in such fashion as to make feasible their widest possible use in actual practice. For the purpose of this work the grounds at Clemson College are used and experiments stations have been established in the Pee Dee section at Florence and in the coast section at Summerville.

3. Extension Work:.....This work consists of carrying to the farmers of the state through county agents, through bulletins and press articles, and through other means the greatest possible amount of information relating to the best practice with regard to crop rotation, soil fertility, means of combating insect pests, and other agricultural matters.

4. Live Stock Sanitary Work: This consists of certain work in the field undertaken for the purpose of controlling and preventing epidemic and other diseases among live stock.

5. Fertilizer Inspection: This work consists of the collection and analysis of fertilizers offered for sale in the state and the dealing with violation of laws relating to the manufacture and sale of fertilizers through prosecution of offenders or other means. Only in the broadest and vaguest sense can this be considered as educational work: in essence it is law enforcement work, though of an agricultural nature.

6. Other Activities: The college also undertakes voluntarily or in accordance with law several other activities such as the manufacture and distribution of serum for the control of hog cholera, the slaughter of diseased stock, tick eradication work, and the control of insect pests.

For the purpose of carrying on the above activities the administrative officers have found it advisable not to attempt to do all the work from Clemson College. As is mentioned above, experiment stations have been established at Florence and Summerville. In connection with live stock sanitary work and certain inspection work, district offices with scientific and clerical staffs of their own have been established at Florence, Aiken, and Spartanburg.

The location of the school at Clemson College also enforces upon the institution the undertaking of a work of unusual activities. Owing to the fact that the school is located in the open country the college has been compelled to provide dormitories, a mess hall for students, housing and hotel facilities for the faculty and other employees, a water and sewerage system of its own, a heating and lighting plant, and even a highway system with a maintenance force. In effect the President is not only the head of an educational institution of considerable size, but is also the mayor of a small but very active municipality and the director of extension research, and law enforcement activities that cover the whole state with considerable thoroughness.

Management and Internal Organization:

The Board of Trustees at Clemson Agricultural College is made up of thirteen members, six of whom are elected by the Legislature and seven of whom are appointed in accordance with the will of Thomas G. Clemson, which named seven of the original trustees and provided that as vacancies occur the remaining non-elected members should name their successors. The Board of Trustees determines policies and either as a whole or through its committees passes upon certain executive matters; the administration of the diverse activities of the college, however, is in the hands of the President who, as a matter of fact, takes an active, if unofficial part also in the determination of policies.

Whether the management of such an institution as Clemson Agricultural College, supported for the most part by public funds, should be placed in the hands of a Board of Trustees the majority of whom are not selected through any state agency is a matter of policy to be determined by the Legislature and the electors. Without question the constitution of the Board is the cause of more or less unfavorable criticism. Equally without question the amount of unfavorable criticism has been held to a minimum through the selection of a high type of men by successive trustees under the terms of the bequest and by the policies followed by the Board as a whole; it appears that as a rule the seven trustees have previously been endorsed by the people through their selection for public office and command the confidence and respect of the people of the state, while additional protection is given by the law providing that no money can be expended unless it is authorized by a vote of at least nine of the members of the Board. A weak or arbitrary board

would probably lead to an immediate and overwhelming demand for a change in the form of management. There seems to be no doubt that the state can at any time make it impossible for the College to continue on the present scale by withholding its support; the income derived from the original bequest and the rental value of the lands is inconsequential in comparison with the total receipts, while the direct state appropriations and the amounts received from the federal government on condition that they be expended under the direction of the state make up by all odds the largest part of the income. It may be pointed out also that it is not clear in view of the provisions of Thomas G. Clemson's will whether the state could be given a clear title to the grounds and buildings under a different form of management; some lawyers hold, however, that legal means of effecting a change exist.

The President has built up the type of internal organization for administrative purposes which is generally considered most effective in securing results, most economical as to cost, and most simple in operation. As is implied above the President is responsible to the Board of Trustees for all administrative matters. Seven Directors, in addition to the Treasurer and Secretary of the Fertilizer Inspection Analysis, are at the head of sub-divisions and constitute the President's unofficial advisory cabinet; each Director is responsible for the operation and expenditures of his department and the teachers and other employees deal with him directly instead of with the President.

Receipts and Expenditures:

The financial statement of such an institution as Clemson Agricultural College, engaged in diverse activities, is of necessity somewhat complex and very voluminous if details are to be shown. The following summaries taken from the budget of the fiscal year

Fiscal Year 1921-22.

1921-22 contain the most important facts:

SUMMARY—CLEMSON COLLEGE FINANCES.

PROSPECTIVE RESOURCES.

(a) Available for Collegiate Purposes and Certain Required Public Services.

| | | |
|--|-------------|--------------|
| 1. Interest on Clemson Bequest | \$ 3,512.36 | |
| 2. Interest on Lanscript | 5,754.00 | |
| 3. Estimated tuition | 13,000.00 | |
| 4. Morrill and Nelson Funds (U. S.) | 25,000.00 | |
| 5. Sales, rents, interest, etc. | 30,000.00 | |
| 6. Estimated Fert. tax and penalties | 200,000.00 | |
| 7. Remaining in reserve fund | 77,209.33— | \$354,475.71 |

(b) Available for Specified Public Service Only—

| | State Appro. | U. S. D. A. Counties, etc |
|------------------------------------|--------------------|------------------------------------|
| 7. Extension Service | \$ 94,147.15 | \$276,922.42 |
| 8. Tick Eradication | 20,000.00 | |
| 9. Live Stock Sanitary Work | 50,000.00 | 32,380.00 |
| 10. Agricultural Research | 50,000.00 | 33,070.00 |
| 11. Crop Pest Commission | 10,000.00 | 10,000.00 |
| 12. Slaughter Diseased Stock | 2,000.00 | |
| 13. Hog Cholera Control | | 50,000.00*** |
| | <hr/> \$126,147.15 | <hr/> \$402,372.42 \$628,519.57 |

(c) Available for Certain College Activities

| | |
|---|----------------|
| 14. Revolving Accounts (receipts) | \$215,893.22** |
|---|----------------|

(d) Available for Cadet Living Expenses

| | |
|--------------------------------|-----------------|
| 15. Cadet Fund Receipts | \$246,443.00*** |
| GRAND TOTAL OF RESOURCES | \$1,445,331.50 |

* Only \$242,049.72 of this amount passes through the College Treasurer. Of this \$121,532.39 is administered by Winthrop College for Home Demonstration.

** Dairy herd, farm, animal husbandry, etc.

*** Last year's figures.

COMPARATIVE STATEMENT**Fiscal Years 1920-21—1921-22****COLLEGE RECEIPTS—**

| | Estimated for 1920-21 | Actually Received | Estimated for 1921-22 |
|---|--------------------------|----------------------|--------------------------|
| 1. Interest on Clemson Bequest | \$ 3,512.36 | \$ 3,512.36 | \$ 3,512.36 |
| 2. Interest on Land Script | 5,754.00 | 5,754.00 | 5,754.00 |
| 3. Morrill and Nelson Funds (U. S.) | 25,000.00 | 25,000.00 | 25,000.00 |
| 4. Tuition and Fees | 17,000.00 | 13,496.40 | 13,000.00 |
| 5. Sales, rents, interests, etc. | 22,000.00 | 46,232.54 | 30,000.00 |
| | <hr/> 73,266.36 | <hr/> 93,985.30 | <hr/> 77,266.36 |
| 6. Fertilizer Tax and Penalties | 300,000.00 | 167,505.16 | 200,000.00 |
| | <hr/> 373,266.36 | <hr/> 261,490.46 | <hr/> 277,266.36 |
| 7. From Reserve Fund | | 77,203.68 | 77,209.35 |
| | <hr/> | <hr/> | <hr/> |
| 8. TOTALS | \$373,266.36 | \$338,694.14 | \$354,475.71 |

EXPENDITURES—

(a) Collegiate Expenses:

| | | | |
|------------------------------------|--------------|--------------|--------------|
| 9. Salaries | \$169,150.00 | \$157,077.69 | \$161,443.34 |
| 10. Coal, labor, etc | 112,984.32 | 96,832.65 | 98,125.50 |
| 11. Total operating expenses | \$282,134.32 | \$253,910.34 | \$259,568.84 |
| 12. Equipment for teaching | 15,735.16 | 7,955.70 | 15,380.00 |
| 13. Building and equipment | \$ 30,131.24 | \$ 26,175.58 | \$ 13,403.25 |
| 14. Totals for College Work | \$328,003.72 | \$288,041.62 | \$288,352.09 |

(b) Public Service (From College Funds).

| | | | |
|-------------------------------------|--------------|--------------|--------------|
| 15. Scholarships and Ads. | 17,000.00 | 12,749.10 | 20,000.00 |
| 16. Fert. Inspection and Anal. | 51,570.00 | 29,952.51 | 40,270.00 |
| 17. S. C. Experiment Station | 6,000.00 | 5,467.55 | |
| 18. Miscellaneous | 2,806.00 | 2,483.36 | 1,400.00 |
| 19. Totals Public Service | \$ 77,376.00 | \$ 50,652.52 | \$ 61,670.00 |
| 20. GRAND TOTALS | \$405,379.72 | \$338,694.14 | \$350,022.09 |

An analysis of these statements show that while total receipts and expenditures accounting to approximately one and a half million dollars in the course of a year may reasonably be expected, the amount available for collegiate instruction and for building and maintenance purposes is really very modest. About a quarter of a million dollars is received from cadets for living expenses and is paid out for the same purpose, the dormitories and mess hall being run at cost. Over \$200,000 in the revolving accounts is received from the dairy, from farms, and from similar operations and is paid out for carrying on these activities. Over \$600,000 must be used for certain specified public services having little to do with the activities of the college proper. Only \$350,000 approximately, remains for collegiate purposes, most of which comes from the fertilizer tax and is uncertain; in addition the \$77,000 in the reserve fund is not income but is a reserve built up through careful economies over a period of years and is used merely to tide the college over the last half of the calendar year when no considerable receipts from the fertilizer tax may be expected. From this amount the salaries of the teaching and maintenance force must be paid, coal and other supplies purchased, and buildings and equipment provided. While casual study of these statements is likely to lead to the conclusion that a large amount of money is available for strictly college purposes, as a matter of fact the amount is little more than is appro-

appropriated for the University of South Carolina and the Citadel, both of which have smaller attendance and which do not require as much or as expensive equipment, and considerably less than is appropriated for Winthrop College, which has a larger attendance but which also is not required to provide such extensive and expensive equipment. In fact, because of the comparatively small amount of money available for college work proper and because of the uncertainty as to the amount that can be collected from the fertilizer tax, there is a perennial danger that this work will be seriously hampered for lack of available funds.

Efficiency of Operation:

From whatever angle the work of Clemson Agricultural College is viewed evidence of efficiency, economy and effective results are apparent. The standing of Clemson College in educational circles and the success achieved over a considerable period by the graduates make unnecessary any extended comments on the strictly educational work. As to economy, the internal organization and procedure are well adapted to securing maximum results at a minimum cost. The Professor of Architecture, for example, is responsible for the maintenance of the buildings and grounds and the Director of the Engineering Department for the operation of other college owned utilities such as the water, light, power, and sewerage systems, as a result, the buildings on the whole are in a good state of repair and the costs of maintenance have been very moderate. The rent of some sixty houses occupied by members of the teaching staff and others is in some cases about 10% of their cost, the occupants paying for their water, gas and other services; this rental provides for maintenance, depreciation and interest on the investment. The commissary system and records might well serve as a model for several state institutions and the same is true of the farm records. The system of purchasing is well worked out and adapted in every particular to the needs of the institution. Cost data are collected, scrutinized, analyzed, and used both for current administrative purposes and for determining policies. At every turn there is evidence of the smooth frictionless working of a carefully devised and operated machine calculated to bring about good results with minimum effort and cost. The recommendations made in this report deal almost entirely with matters of policy or with small matters of organization or procedure almost inconsequential in view of the operation of the College as a whole. The expense of operation—about \$300 per student for collegiate purposes in 1920-21—is moderate in view of the buildings, laboratories, shops and personnel required to give instruction of a high standard in agriculture, engineering textiles, and other technical subjects.

Desirability of Direct State Appropriation:

As is stated in preceeding sections, the college received the receipts from the fertilizer tax, which vary from year to year largely according to industrial conditions; the gross collections exceeded \$300,000 in 1919-20 and fell below \$151,000 in 1914-15 (the average for 31 years has been \$155,000). Until recently this tax provided the College with a liberal income out of which it could pay running expenses and make considerable outlays for buildings and other permanent equipment. With the growth of the college and the increase of operating costs, however, this method of financing the college work proper has become less and less satisfactory, and in the interest of continuity of policy and program and economical management should be discarded as soon as possible in favor of direct appropriations. It is particularly unfortunate that the college proper should depend upon such an uncertain income while specified appropriations are made for public work such as live stock sanitation. The administrative officers are able to determine with great accuracy the money needed to carry on the collegiate work and have given ample evidence through the accumulation of the reserve fund, through the construction of a large number of buildings, and through economical management that they are unlikely to ask for excessive amounts or to expend appropriations improperly if the Legislature makes this change. On the other hand,, there is every evidence that the management is hampered and must follow a cautious policy as long as reliance is placed upon the fertilizer tax, while certain desirable kinds of work such as forestry, cannot be undertaken at all. It would be better from every point of view to turn the fertilizer tax into the state treasury and to make direct appropriations sufficient to meet the needs of the collegiate work.

Building Program:

The building program in recent years has been as uncertain as the fertilizer tax upon which it has depended. The present buildings are not adequate to house properly the present student body and teaching force despite the fact that the attendance has not reached the point generally considered as most desirable to reduce the per capita cost to a reasonable amount without at the same time increasing the number of students to such an extent that the best educational and social results are not attained; in view of the present attendance of approximately 1000 of the likelihood of considerable increase in the next few years if facilities are provided, and of the desirability of an increase of at least 25% in order to reduce per capita costs, it would appear desirable to lay out and follow a definite building program. It is believed that if the Legislature should adopt the plan of providing say \$100,000 a year for a period of ten years or about \$150,000 a year for about six or seven years the physical equipment could be built up to keep

pace with the growth in attendance and that at the end of the period the college would be well equipped as to building for a considerably larger number of students without the necessity of a bond issue and a consequent practical doubling of building costs owing to interest payments. As yet there is opportunity to embark on this policy of relatively slow building up; a delay of two or three years would surely mean a bond issue to provide immediately the extra equipment necessary to take care of the increased number of students to be expected in that time. Even at present the extension service is poorly housed and seriously crowded and additional buildings are needed for some other departments.

Scholarships.

In the school year 1920-21, \$12,749.10 was expended for scholarships and the advertising connected therewith and it is estimated that \$20,000 will be needed for this purpose in the school year 1921-22. A separate report will take up the matter of scholarships in the state supported colleges.

Graduate Work:

Up to this time no attempt has been made to undertake graduate work at Clemson Agricultural College, partially because the finances and facilities of the institution have been taxed to provide for undergraduate work and partially because of the feeling on the part of the Board of Trustees and the President that such work is as yet not necessary. It appears that the time is near at hand, however, when it will be desirable to offer graduate work in both agriculture and engineering. The University of South Carolina, with much poorer equipment and with much less adequate teaching staff at present offers graduate work in civil engineering; it will be pointed out in the interim report on the University that the University is the best place to build up a graduate school in the arts and pure sciences but that graduate work in applied science cannot be undertaken there without great duplication and prohibitive costs. Because of the teaching personnel and the equipment already at Clemson Agricultural College any graduate work of this kind should be undertaken there; and it is believed that the best interests of the state will be served if graduate courses are introduced within the next two or three years.

Salary Scale:

The plan of organization adopted make possible the building up of a strong teaching force at a very moderate expense. The salaries of the Directors in the main are \$3500 though three are paid \$4000, \$4250, and \$4500, respectively, while one (the Commandant) receives \$1500 and a house in addition to his army pay. In general the highest paid professor under the director receives \$2800, though in the Agricultural Department four receive from \$3000 to \$3250; the salaries of the other members of the teaching

staff range down to as little as \$1400. No such perquisites as free rent, light, heat or fuel are furnished except in the case of the Commandant. The following list showing the positions and salaries in the engineering department is believed to be typical:

| | |
|---|------------|
| Director and Supt. of Heat, Light and Water..... | \$4000.00 |
| Professor of Civil Engineering | 2800.00 |
| Profesor of Electrical Engineering | 2800.00 |
| Professor of Drawing and Architecture | 2800.00 |
| Professor of Electrical Engineering | 2800.00 |
| Assistant Professor of Machine Shop | 2250.00 |
| Associate Professor of Foundry and Forge | 2250.00 |
| Associate Professor of Drawing | 2250.00 |
| Associate Professor of Mechanical Engineering | 2500.00 |
| Assistant Professor of Civil Engineering | 2000.00 |
| Assistant Professor of Architecture | 2000.00 |
| Assistant Professor of Wood Shop | 2000.00 |
| Instructor in Drawing | 1800.00 |
| Instructor in Shop Work | 1600.00 |
| Stenographer | 1020.00 |
| <hr/> | |
| Total | \$34020.00 |

In determining the starting salary and making advances no uniform plan is followed. In general the educational and professional attainments and the results secured in the class room are the prime considerations.

Form of Appropriations:

The form and content of the budget estimates and the section of the appropriation bill relating to Clemson Agricultural College are drawn up in an extremely unsatisfactory fashion as neither the total income and the sources from which it is derived nor the total expenditures with their purpose and character are shown. This is not the fault of the college authorities, for as a matter of fact Clemson Agricultural College has a very carefully worked out budget, perhaps more complete and accurate than any other large institution to which the state makes appropriations, and is able and willing to furnish any information in any form desired. It is eminently desirable that both the estimates prepared by the budget authorities and the appropriation bill should be drawn up in such form that members of the Legislature and interested tax payers may have a clearer picture of the income, of the expenditures, and of the purposes for which the money is spent. This would not entail any extra work worthy of mentioning on either the part of the college authorities or the budget officers, but would result in a distinct gain to the Legislature and in the end to the college itself by giving members of the Legislature an intelligent conception of the finances and needs of the institution.

Fertilizer Inspection Work:

The collection and analysis of samples of fertilizers require an annual expenditure of about \$40,000, the largest item being \$12,500 for the pay and travel expenses of thirteen inspectors, \$8,500 for tags and printing, and \$8,550 for the salaries of Chemists who engage in the analysis of samples. This work being in the nature of law enforcement and only indirectly related to education serves to put the College before many citizens in an unfavorable light. It is particularly unfortunate that the College should be placed in the position of bringing prosecutions, though the necessity for such action has been reduced to the minimum by the practice of making conspicuous in the annual statements the names of the manufacturers of samples found deficient as well as of the respects in which the samples are deficient. At the time the College was visited nothing was being done in the way of fertilizer inspection or analysis, as this work is confined almost entirely to the first half of the year; it is believed, however, that the work is more efficiently and economically handled than could reasonably be expected from any other state agency and that it should continue to be done by Clemson Agricultural College unless the unfavorable criticism which results is regarded as sufficient reason for transferring this work elsewhere. One difficulty of making the transfer is the necessity, in some cases at least, of making field tests with growing crops as well as chemical analysis.

Publicity Work:

In connection with the extension and research work a number of different kinds of publicity matter are prepared and distributed, including a weekly news letter "The Weekly News Notes", bulletins and posters. This material appears to be prepared satisfactorily from the standpoint of scientific accuracy, news value, and suitability for the audience addressed. Some embarrassment results from the necessity of pointing out the lack of scientific accuracy in some of the material sent out by the Commissioner of Agriculture's office through the Market Bulletin. The publicity matter of the college is well prepared and covers the field as thoroughly that it is not believed the necessity exists for the issuing of any such material by any other state agency.

Comments on Procedure and Conditions:

As is indicated in the preceeding section, with rare exceptions the procedure is all that could be asked and existing conditions are very satisfactory. The following comments refer to some matters in which improvement might be possible:

Commissary Records: The Commissary records are on the whole very well kept but it would seem that the perpetual inventory system might be introduced with benefit in the record of supplies received and issued.

Chemical Supplies: It is understood that under the system prevailing last year no one individual was in charge of the store room for the equipment and the supplies kept in the chemistry building and as a result some of the apparatus in usable condition becomes scattered about the various laboratories and the stock of chemicals and chemical apparatus somewhat confused with certain parts broken and damaged. It is understood, however, that this condition has been remedied with the opening of the new school year by placing one individual in charge.

Fire Hazards: The recent fire in the kitchen and commissary, which was quickly extinguished, demonstrated the effectiveness of the school fire fighting force and equipment. The water pressure and the storage facilities seem ample, but it might be desirable to extend to the agricultural and dairy buildings, where gases and chemicals are used, the sprinkler system which has already been installed in the engineering building and shops and chemistry buildings, and the hotel. Possibly it might be advisable to install some additional hand fire extinguishers in some of the other buildings.

Summary of Recommendations:

It is recommended:

1. That direct appropriations from the state treasury be substituted for the income derived from the fertilizer tax.
2. The estimates and appropriations show the amount and sources of the income and the purpose and character of expenditures in considerable detail and that the estimates be supplemented by such supporting schedules as may be necessary to show a complete picture of the financial operations and needs of the college.
3. That a building program effective in 1922 and providing for annual appropriations of \$100,000 for a period of ten years or \$150,000 for six or seven years be adopted.
4. That consideration be given to the undertaking of graduate work in engineering and agriculture.
5. That the publicity work with regard to agriculture be continued along the present lines and that any such publicity work undertaken by other state agencies be either discontinued or transferred to Clemson Agricultural College.
6. That certain minor matters of procedure of maintenance be given attention.

INVESTIGATING STAFF

By Fred Telford,
Chief Investigator.

Columbia, S. C., Oct. 7, 1921.

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THIRTY-THIRD ANNUAL REPORT

OF THE

BOARD OF TRUSTEES

OF THE

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AGRICULTURAL
COLLEGE

TO THE

General Assembly of South Carolina

1922

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LETTER OF TRANSMITTAL.

To the General Assembly of South Carolina

Columbia, S. C.

Gentlemen:

In obedience to the laws of the State, the Board of Trustees of The Clemson Agricultural College of South Carolina presents herewith its annual report covering the operation of the College for the fiscal year July 1, 1921 to June 30th, 1922.

The report is voluminous because it is our desire to give to the Legislature the fullest information with regard to the work, the plans and the finances of the State's agricultural and mechanical college.

The attention of the General Assembly is especially directed to the last chapter of the President's report, page 38, which deals with the financial condition in which the College finds itself. We present this condition to you with full confidence alike in your wisdom and in your patriotism. For thirty-one years the College has been able to live on the bargain entered into originally, whereby the College was to derive its support chiefly from the Fertilizer Tax. When obedience to this ancient compact imperils the very life of the College, the Board has no alternative but to ask you to share in its concern and provide a suitable remedy.

Unless adequate financial assistance is made at the coming session of the General Assembly it will be necessary at the opening of the fiscal year July 1st, 1923, to reorganize the College on the basis of a smaller faculty and smaller student body. When in the single session covered by this report, and in spite of hard times, the student body increased by 20 percent, such an alternative, I am sure, will not be entertained by your honorable body.

Yours truly,

Alan Johnstone,
President Board of Trustees.

Clemson College, S. C.,
December 15, 1922.

REPORT OF THE PRESIDENT OF THE COLLEGE

Covering the Fiscal Year July 1, 1921—June 30, 1922.

Clemson College, S. C.,

December 15, 1922.

From: W. M. Riggs, President of Clemson Agricultural College.

To: Hon. Alan Johnstone, President of the Board of Trustees.

Dear Sir:

I have the honor to submit herewith the President's annual report covering the twenty-ninth session of The Clemson Agricultural College of South Carolina.

The report covers the fiscal year from July 1, 1921 to June 30, 1922, and is intended for your thirty-third annual report to the Legislature.

I have arranged the report in seven main divisions as follows—

CHAPTER I. THE FISCAL YEAR—1921-1922.

- 1. A General Summary.**
- 2. A Fiscal Statement.**
- 3. The Collegiate Work.**
- 4. The Student Life and Interests.**
- 5. The Public Service.**

CHAPTER II. 1923.

- 6. Appropriations for Public Service 1923.**
- 7. The Financial Outlook.**

CHAPTER I—THE FISCAL YEAR 1921-22

PART I. GENERAL SUMMARY.

The enrollment during the session 1921-22 was 1,007—by far the largest in the history of the college. The average enrollment for the previous five years was 843. Of this total enrollment approximately 50 percent were the sons of men actually engaged in farming, and about 68 percent were sons of farmers and small merchants.

The graduating class of 1922 numbered 131 men.

The 1922 Summer School, like the general session, reached its maximum at 478 students.

The general attitude and esprit of the corps of cadets was on the whole very satisfactory, and the year was marked by a spirit of harmony and cooperation among the teachers and officers of the college.

Both discipline and class work were maintained on a very satisfactory basis. During the year the college again earned the distinction of being one of the "Distinguished Colleges" in the Fourth Corps Area.

During this session the college curricula were thoroughly revised and enriched, and plans for a two year agricultural course and a general science course were perfected. The fifteen unit standard for entrance was adopted to be effective in September 1922.

The property of the college, including the campus and its buildings, was probably never in better condition, and taking them as a whole, the facilities of the college for good teaching were never better.

Among the visible additions to the college plant may be noted the new second story to the wood shop, the new post-office equipment, the new laundry, the new basketball gymnasium, (built by student and alumni contributions), the new hog barn and calf barn built last summer, and the installation of the new civil engineering and steam engineering laboratories in the quarters formerly occupied by the wood shop.

I regret to report that the fertilizer tax of \$126,118.07 was the lowest in the past seventeen years, and was utterly inadequate to carry on the program of collegiate instruction made all the more acute by the sudden increase of 20 percent in

attendance over the previous session. We had to avail ourselves of the authority given by the Legislature to borrow \$112,842.11. This was borrowed not from the Sinking Fund Commission but from the State Treasurer. Needless to say that while operating on borrowed money the college had to plan its work with the greatest economy and limit its expenditures to absolute necessities.

Inventory:

Our inventory as submitted to the Governor gives the following property values as of date June 30, 1922—

| State Classification | Estimated Present Value |
|---|----------------------------|
| 1. Office Equipment ----- | \$ 50,655.28 |
| 2. Household Equipment ----- | 45,881.86 |
| 3. Educational & Recreational Equipment---- | 229,409.07 |
| 4. Library Equipment ----- | 48,820.85 |
| 5. Vehicles ----- | 11,930.51 |
| 6. Live Stock ----- | 45,233.02 |
| 7. Medical & Surgical Equipment ----- | 1,743.53 |
| 8. Military Equipment ----- | 2,840.10 |
| 9. General Plant ----- | 133,370.11 |
| 10. Buildings ----- | 1,121,557.45 |
| 11. Real Estate ----- | 354,479.00 |
| <hr/> | |
| Total Equipment ----- | \$2,045,920.78 |
| 12. Supplies ----- | 67,458.98 |
| <hr/> | |
| Totals ----- | \$2,113,379.76 |

Inspections and Visitations:

Under Section 18 of the By-Laws the Board of Trustees elects each year a Board of Visitors composed of one prominent citizen from each congressional district. The Board of Visitors for 1922 was made up of the following gentlemen—

1st District, Robert Lathan of Charleston; 2nd District, C. H. Seigler, of Aiken; 3rd District, S. J. Derrick of Newberry; 4th District, A. F. McKissick of Greenville; 5th District, J. Lyles Glenn, Jr., of Chester; 6th District, J. S. Thompson of Dillon; 7th District, W. W. Ball of Columbia.

This Board visited the college on May 3rd and 4th, all members being present except Mr. Lathan of Charleston. Mr. A.

F. McKissick was elected Chairman and Mr. W. W. Ball Secretary. The Committee spent the better part of two days in making a thorough though hurried inspection, and their very comprehensive survey is given on page 118 of this report.

The Board of Visitors called attention to the need of a new dormitory, a new hospital, hard surface roads, an additional experiment station in the Sand-hill section of the state, and suggested the wisdom of experimental farms to test out a proper diversified program that might be profitable to the small farmer.

With reference to the financial systems of the college, The Board has this to say—

"Financial administration of the institution is more than excellent. The methods were explained to the Board in great detail and the members saw that a model of accuracy and comprehensive efficiency in bookkeeping has been arrived at. In addition to an elaborate and exact system of checking and counter-checking that seemingly would promote the highest degree of economy while preventing waste, extravagance and dishonesty in expenditures, an interesting and valuable record of the performance of the cadets is carefully kept."

In referring to the financial difficulties in which the college finds itself, the Board of Visitors makes the following comment—

"Clemson College has depended in the main for the support of its collegiate activities, as well as for the buildings and extension of its plant, upon the fertilizer tag tax. The last two years, on account of the boll weevil infestation and agricultural depression, these revenues have been more than cut in half and loans from the state's sinking fund, authorized by the Legislature, have been the resort. No early increase in the revenues from fertilizer inspection is in prospect, and the question of future support of the college presses for answer. Two courses are open. The one is that the inspection revenues be covered into the state treasury and that the college be supported by direct appropriation. The second is that the college receive as heretofore the inspection revenues and that the Legislature directly appropriate an additional sum that will provide for its comfortable maintenance. The Legislature would determine the minimum amount of money that the college will need for a year and guarantee that it receive the difference between the total of inspection and other revenues and that amount. The Board advises the adoption of this second course. It would be for the Legislature to say in what degree it should control the manner of expenditure, whether of the inspection revenue or of the direct appropriation."

Report of the Committee on Economy and Consolidation:

Experts of the Committee on Economy and Consolidation which made a report to the last General Assembly, were most complimentary as to the economy and efficiency of the college management. This is indicated by the following few sentences from their Interim report No. 45—

Efficiency of Operation:

"From whatever angle the work of Clemson Agricultural College is viewed, evidence of efficiency, economy and effective results is apparent * * * At every turn there is evidence of the smooth, frictionless working of a carefully devised and operated machine calculated to bring about good results and minimum effort and cost."

The interim report of these experts to the Committee will be found as the last chapter in this publication, page 211.

Legislative Visitors:

For the past five or six years it has been the practice of the college to invite in small groups members of the General Assembly who have not been here, to come to the college and see for themselves the work of the institution. In the 1921-22 Assembly, 93 members had been at the college at one time or another. Of the 1922-23 General Assembly, half of the members, (70) who had not been here, were invited in the fall of 1922, and the other half will be invited during the spring and fall of 1923.

Unfortunately all who are invited are not able to accept our invitation, and Clemson is so remote from Columbia that the General Assembly cannot very well come here and return the same day. Even if they could, the location of the college in the country and remote from its railroad stations, makes the handling of so large a crowd of visitors at one time impracticable.

It is our hope that every member of the present General Assembly will during his term of office, as a matter of official duty, pay the college a visit. Certainly he will have an invitation to do so.

Legislation:

We have probably never had a Legislature more favorably disposed towards the college or more appreciative of its service than the General Assembly of 1922. About ninety-three of

these gentlemen had visited Clemson from time to time in small groups. They had been shown over the college and had carefully explained to them its aims and purposes and its financial methods. The personal testimony of these ninety-three members, the complimentary report of the Legislative Committee on Economy and Consolidation, and the report of the experts already quoted from, created I am sure a most favorable impression on the Legislature.

The following appropriations were made for the Public Service rendered by the college—

| | |
|--------------------------------------|--------------|
| For extension service ----- | \$110,862.85 |
| For tick eradication ----- | 20,000.00 |
| For live stock sanitary work ----- | 50,000.00 |
| For agricultural research work ----- | 50,000.00 |
| For crop pest Com'n work ----- | 10,000.00 |
| For slaughter dis'd live stock ----- | 2,000.00 |
| Total ----- | \$242,862.85 |

The following additional legislative acts affecting the college were passed—

1. A Loan Act similar to that of 1921 authorizing the college to borrow if necessary as much as \$150,000.00
2. An amendment to the Crop Pest Commission Act intended to give to the Commission power to prevent fraud or misrepresentation in the sale of fruit trees, vines, shrubs, bulbs, etc.
3. An Act giving the Crop Pest Commission the power to prevent the introduction and dissemination of contagious diseases in honey bees.
4. An Act setting up specifications for calcium arsenate and placing upon the Crop Pest Commission the authority of enforcing the same.

None of the acts passed are objectionable to the college, and in fact the President of the college and the President of the Board of Trustees were given full opportunity to present their views while the legislation was pending. The Agricultural Committee, which is also the Crop Pest Commission, has considered the acts requiring additional service at the hands of the Commission, and adopted the necessary regulations to put the new provisions into effect.

Board of Trustees:

The vacancy in the Life Trusteeship caused by the death of Senator B. R. Tillman in 1918 was filled by the election in July of Mr. B. E. Geer of Greenville.

The Board held its three regular annual meetings in December, April and July at the college and one extra meeting in September in Columbia to consider the award of scholarships.

PART II. A FISCAL STATEMENT

Fertilizer Tax:

During the fiscal year under consideration the fertilizer tax dropped to \$126,118.07. This is the lowest figure for the past seventeen years, the next lowest being in 1914-15, the year following the buy-a-bale movement when the tax dropped to \$155,859.76.

Loans of 1921:

Under the borrowing Act of the last General Assembly, we borrowed from the State Treasurer at 6 percent interest, \$112,842.11. All over \$250,000.00 from the fertilizer tax is pledged to the repayment of this loan, and in any case the annual repayment must not be less than one-tenth of the principal sum with interest. In making this loan we did not solicit it from the Sinking Fund Commission for the reason that the moral obligation to repay the loan would in that event be greater than if the money were obtained under the general borrowing power of the state. The money of the Sinking Fund Commission is for the protection of its policy holders, and any institution borrowing these resources is under a moral as well as a legal obligation. On the other hand, should the college at any time in the future go upon an appropriation basis, the simplest way out for the Legislature would be to cancel the loan on the sound theory that there would be no purpose of utility in the State's appropriating money to pay itself.

Treasurer's Report:

The Treasurer's annual report and the report of the Auditor of the State Bank Examiner give full information in regard to the expenditures of all college funds.

The following is a summary of receipts and disbursements for college purposes and those activities which are required by law to be paid from the fertilizer tax receipts—namely scholarships and the fertilizer inspection and analysis.

Summarized Statement.

Receipts and Expenditures from the Fertilizer Tax and Other Funds Available for Collegiate Work.

Resources.

DR.

Income.

| | |
|--|--------------|
| 1. Interest on Clemson Bequest ----- | \$ 3,512.36 |
| 2. Interest on Landscip ----- | 5,754.00 |
| 3. Morrill & Nelson Funds (U. S.) ----- | 25,000.00 |
| 4. Tuition from Students ----- | 15,601.94 |
| 5. Rents on College Houses ----- | 9,714.27 |
| 6. Interest and Miscellaneous Receipts ----- | 13,600.87 |
| 7. Matriculation and Laboratory Fees ----- | 4,892.83 |
| 8. Privilege Fertilizer Inspection Tax ----- | 126,118.07 |
| | <hr/> |
| | \$204,194.34 |

From Other Sources.

| | |
|------------------------|------------------------|
| 9. State Loan ----- | \$112,842.11 |
| 10. Reserve Fund ----- | 77,209.35—\$190,051.46 |
| | <hr/> |
| Total---- | \$394,245.80 |

CR.

Expenditures.

| | |
|--------------------------------------|------------------------|
| 11. Scholarships and Adv's ----- | \$ 14,461.98 |
| 12. Fertilizer Inspd. and Anal.----- | 22,929.29—\$ 37,391.27 |

College Operating Expenses:

| | |
|---|-----------------------|
| 13. Salaries - ----- | \$154,809.18 |
| 14. Coal, Labor, etc. ----- | 92,580.65— 247,389.83 |
| 15. Equipment for Teaching ----- | \$ 13,104.36 |
| 16. Permanent add's and Imp's --- | 24,857.47— 37,961.83 |
| | <hr/> |
| | \$322,742.93 |
| 17. Reserve on hand, June 30, 1922, necessary to carry college during season of small ferti- lizer sales, July 1st to January 1st ----- | 71,502.87 |
| | <hr/> |
| Total---- | \$394,245.80 |

Reserve:

During the first six months of the fiscal year, July 1st to December 31st, the college receives no net revenues from the fertilizer tax. In fact, the cost of inspection and analysis dur-

ing that period exceeds the income from the same source. It is therefore necessary that the college begin its fiscal year with sufficient funds from the previous year to carry the college until the fertilizer season again opens.

The college entered on the fiscal year July 1, 1921, with a reserve of \$154,413.03. This reserve practically equalled a half year's cost and was made possible by the unusually large fertilizer tax of the fiscal year 1920, when the maximum figure of \$313,472.54 was reached. When the fiscal year 1920-21 ended on June 30th, the fertilizer tax showed a reduction to \$167,505.16, and our reserve had been half consumed, leaving the balance with which to start the fiscal year 1921-22 at \$77,209.35. During the year covered by this report the fertilizer tax reached low water mark at \$126,118.07, and after borrowing from the state \$112,842.11, we entered the year with a book balance of \$71,502.87—but counting our indebtedness, an actual deficit of \$41,339.24.

Audit:

The report of the audit by the State Bank Examiner is made a part of this report and will be found interesting reading. This shows the total of receipts from all sources \$1,555,878.77 and a total disbursement of \$1,438,752.66, with a balance of \$117,126.11 made up as follows—

| | |
|-------------------------------|--------------|
| On the college fund ----- | \$ 71,502.87 |
| On the cadet fund ----- | 13,454.01 |
| On revolving funds ----- | 30,824.94 |
| On farm products account ---- | 1,417.51 |
| | <hr/> |
| | \$117,199.33 |

| | |
|-----------------------------------|--------------------|
| Overdraft, cadet deposit acct.--- | 73.22—\$117,126.11 |
|-----------------------------------|--------------------|

The auditor's statement does not include expenditure for certain lines of work, the money for which is paid from sources entirely independent of the college. Into this class comes \$32,952.00 paid by the Treasurer of the United States for extension work. A summary of all the funds administered would be as follows—

Summary of All Funds Administered

Disbursements—Fiscal Year 1921-1922.

Expenditures:

| | |
|--|----------------|
| 1. For College purposes ----- | \$285,351.66 |
| 2. For agricultural public service ----- | 661,160.31 |
| 3. For revolving accounts ----- | 332,969.85 |
| 4. Cadet funds (board, uniforms, etc.) ----- | 238,682.16 |
| 5. Cadet deposits (personal accounts) ----- | 66,441.67 |
| Total ----- | \$1,584,605.65 |

PART III. THE COLLEGIATE WORK.

Support:

As stated in a previous chapter, the college work is supported almost entirely from the balance which remains of the fertilizer tax after the cost of the inspection and analysis has been paid. For the fiscal year 1921-22, the total expenditure for what might be termed "collegiate work" were as follows—

| | |
|---|-------------|
| For salaries, labor, insurance, coal, shop and laboratory materials, etc. ----- | \$247,389.8 |
| For teaching equipment and minor improvements and additions to plant ----- | 37,961.8 |
| For scholarships ----- | 14,461.9 |
| Total Operating Expense ----- | \$299,813.6 |

This total is a very low operating cost for a technical college of this size, representing approximately \$300.00 per student.

Enrollment:

The total enrollment for 1921-22 was 1,308, distributed as follows—

| | |
|-------------------------|---------|
| (a) In College Courses: | |
| Seniors ----- | 140 |
| Juniors ----- | 151 |
| Sophomores ----- | 178 |
| Freshmen ----- | 338—807 |

(b) In Special Classes:

| | |
|--|---------|
| One Year Agriculture | 28 |
| Specials and Irregulars | 64 |
| Federal Board Students not in degree courses | 108—200 |
| Regular Session | 1,007 |

(c) Summer School Students 301

Total 1,308

The 1,007 students enrolled during the regular session of the college were distributed by courses as follows—

| | |
|----------------------------|----------|
| In Agriculture | 432 |
| In Engineering | 409 |
| In Textile Industry | 110 |
| In Chemistry & Chem. Engr. | 21 |
| In Architecture | 18 |
| In Pre-Medical | 17—1,007 |

Occupation of Parents:

| | |
|--------------------------------|---------------|
| Farmers | 49.7 percent. |
| Merchants | 18.3 percent. |
| Lawyers, doctors and preachers | 7.5 percent. |
| Mechanics, etc. | 12.8 percent. |
| Unclassified and Miscellaneous | 11.7 percent. |

Graduates:

The Senior Class was the next largest in the history of the college, numbering 140 men. Of this number 131 have received the degree of B. S., and five more men will likely receive their degrees after making up work on which they were behind.

Graduates---Class 1922.

| | |
|---------------------|-------|
| In Agriculture | 48 |
| In Mech-Engr. | 16 |
| In Elec-Engr. | 20 |
| In Textile Industry | 17 |
| In Chemistry | 8 |
| In Civil Engr. | 19 |
| In Architecture | 3 |
| In Architecture | 3—131 |

One Year Agricultural Course:

On May 26th certificates were awarded to 18 men who satisfactorily completed the One-Year Course in Agriculture. It is a great disappointment to us that more young farmers in South Carolina do not avail themselves of this excellent practical course in agriculture.

Certificates of Merit:

Certificates for distinguished agricultural service were awarded to Mr. Dan E. Good, of Walhalla, for his excellent work in the development of the apple industry in the Piedmont Section, and to Mr. Wade Drake, of Anderson, for progress in farm management and excellent methods of soil improvement.

Summer School:

The sixth summer school extended from June 12th to July 22nd. The enrollment reached a total of 301 students, distributed as follows—

| | |
|--------------------------------|-----|
| Agricultural Teachers ----- | 68 |
| Corn Club Boys ----- | 66 |
| Cotton Graders ----- | 16 |
| Federal Board Students ----- | 91 |
| College Make-up Students ----- | 48 |
| Preparatory Students ----- | 12 |
| Total ----- | 301 |

Scholarships:

There were in effect 92 regular four-year county scholarships and 7 from the State-at-large, of which 63 were taking agriculture and 36 textile engineering. Only 13 of the one-year agricultural scholarships were filled. Of the above scholarships, 66 percent were held by farmers' sons.

It will be noted that in spite of the hard times and the fact that our attendance is larger than ever before we have fewer scholarships filled than since their inauguration at Clemson. Of the total 223 scholarships which are offered, only 112 are filled. There are vacant 61 four-year scholarships and 40 one-year scholarships. For some reason the one-year agricultural scholarships have never proved very attractive, and it is our plan to suggest an amendment to the Scholarship Act changing these scholarships from one-year to two-year duration. This two-year course will be so designed that should a student lack a few units of being able to enter the Freshman

Class desire to change over to the regular college course, he can do so at the end of the first year.

The Training of Disabled Soldiers:

In previous reports I have discussed rather fully the training of disabled soldiers sent here by the Veterans' Bureau for vocational education. During the session covered by this report the enrollment of these soldiers was 136. Seventeen of these were in the regular college classes, six in the one-year agricultural course, five in the two-year textile course, and the remainder in special vocational courses principally in agriculture. Approximately half of these disabled soldiers are married and live in the vicinity of the college. We have room in the barracks for only a small number and the remainder have to shift as they can.

The expense of educating these soldiers is borne entirely by the federal government. The expenditures for that purpose during 1921-22 were \$12,938.35.

During this session, Dr. W. H. Mills, on a year's leave of absence, had charge of this work and gave excellent service. Upon his return to the service of the Agricultural Department, his position was filled by Mr. M. L. McHugh, a graduate of the Class of 1919, appointed by the Atlanta office.

Reserve Officers' Training Corps:

Clemson College has the distinction of having more students in the advanced infantry course of the R. O. T. C. than any other college in the United States. Under the Morrill Act establishing land grant colleges, we have always required the Freshmen and Sophomore classes to take three years of military instruction and as an adjunct to discipline, we have required the same amount of military instruction during the Junoir and Senior years.

However, the students who enter the advanced course at the beginning of the Junior year are required to take five hours per week of military instruction, and in compensation therefor the government pays such students the amount of the army ration for the two years they are in the advanced course. During all four years an average allowance of about \$18.00 is paid as commutation on uniform .

The Teaching Work of the College:

As stated elsewhere in this report, a general spirit of harmony and cooperation has been most apparent in the official family of the college. I have been impressed with the earnestness and consecration of the faculty, which during the year has shown itself quite progressive in the design of new courses and in the improvement of old ones. The course in General Science has been introduced—also the study of the English Bible. The operation of the college has been changed from the three-term to the two term system, and in that connection the curricula of all the courses have been revised and improved.

Our salary scale is still below that of other institutions of this kind, or other state colleges for men. This becomes manifest every time it is necessary to fill a new position. A glance over the statistics of the U. S. Bureau of Education shows that on the average our salaries are about 20 percent below what is considered normal.

The experts of the Committee on Economy and Consolidation, as will be seen from their interim report, page 211, commented favorably on the economical administrative organization of the college, which resulted in an economical salary scale and a comparatively low cost per student for instruction.

In 1922 the Bureau of Education in Washington published averages for 73 colleges and universities, and their figures together with the figures at Clemson, are given for purposes of comparison. When houses are furnished rent free the value of this perquisite is added to the cash salary.

| | Pres. | Deans or Directors, | Profs. | Assoc. Profs. | Asst. Profs. | Instr's |
|---------------------------|--------------|------------------------|--------------|------------------|-----------------|--------------|
| Average of 73 colleges | \$8,482 | \$4,250 | \$3,392 | \$2,800 | \$2,300 | \$1,800 |
| Clemson | | | | | | |
| Averages | 6,000 | 3,650 | 2,808 | 2,288 | 2,035 | 1,620 |

In every case it will be noted that Clemson is below the average. No houses or other perquisites go along with positions on the Clemson faculty.

I think our faculty recognizes that there are some living conditions at Clemson more favorable from the cost standpoint than in cities like Charleston and Columbia. At the same time, opportunities which are attractive to educated men

are very limited in a college located in the country. Under rural environment college professors must resign themselves to living a more narrow and more provincial life than if they lived in a city with greater civic and social opportunities.

Review of Departments:

The unit of organization at Clemson College is the subject-matter divisions, such as mathematics, architecture, botany, biology, electrical engineering, mechanical engineering, etc. These divisions are grouped appropriately into seven departments as follows—

Academic; Agricultural; Chemistry; Engineering; Military; Textile; and Student Affairs.

Divisions such as the library, treasurer's office, C. & R. Division, etc., are not grouped into departments, but are directly under the President's supervision.

In the following review of departments it is not attempted to give changes in personnel and details. Only facts of outstanding interest will be mentioned.

The Academic Department—D. W. Daniel, Director:

The Academic Department includes the divisions of English, mathematics, physics, history and political economy, and is more directly related to the public school system of the state than are the purely technical departments.

The work of the Academic Department was never better than in the year covered by this report. Related as it is to the very foundations of all education and of all technical courses, the only pity is that more time cannot be devoted to cultural and humanistic studies. However, until college customs shall decree a course of five or six years' duration instead of the present four year course, we will have to content ourselves with too little of what this department is able to give, in order to make room for those subjects upon which a student's preparation for a profession depends.

The Agricultural Department—Resident Teaching—

F. H. H. Calhoun, Director:

The teaching work of the Agricultural Department has been very good this past session. In fact, I feel that no college in the state, if in the South, is giving more thorough instruction in the various agricultural lines than is Clemson. This is in part

due to the fact that we have a director whose sole duty it is to look after the teaching. The extension and research work are not developed at the expense of the teaching, but the three go along on a footing of equal importance. The most important work of an agricultural college is to train teachers and leaders in agriculture. Upon the success of that work eventually depends the progress which can be made both in research and in extension.

Additional space for agricultural teaching is a pressing need, and if the student body is at all increased, one additional building and an extension of the present agricultural hall will be absolutely necessary.

The plant of the department has been very much increased by the completion of the hog barn and the calf barn, as additions to the animal husbandry and dairy divisions respectively.

The Chemistry Department—R. N. Brackett, Director:

This department has in charge not only the teaching in chemistry, but the work of the fertilizer analysis and chemical investigations for the South Carolina Experiment Station and miscellaneous investigations required under the laws of the State. No department of the college is doing better work than this excellently equipped and well-manned department. The great interest of the students who are specializing in Chemistry is shown by the increasing number of graduates in Chemistry who are pursuing their work for higher degrees at the large universities of the north and west.

The Engineering Department—S. B. Earle, Director:

The drift towards the engineering courses noted in my last report still continues. Of the entire student body approximately half are in agriculture, but an increasingly large percent of the Freshman Class of last session and this are electing engineering courses. This means a very heavy burden upon the teaching force and facilities of the department.

The fifty-foot addition to the east wing of the engineering building which was completed last session has added greatly to the department's facilities. On the lower floor of this wing is gradually being assembled a first-class civil engineering testing laboratory and a laboratory for steam and hydraulic en-

gineering. The second story to the wood shop wing has been completed and is now occupied, this new story relieving the lower story of the east wing for the engineering laboratories mentioned above. It is the purpose of the department to put special emphasis upon civil engineering work because of the great need for civil engineering graduates to participate in the road building program of the state. Within a few years it is our expectation to have a testing laboratory which will be equal to any in the South and which will be available not only for teaching, but for the use of the State Highway Commission.

The Military Department—Major Madison Pearson, Director:

The resignation of our efficient and esteemed Commandant, Major J. M. Cummins, became effective September 1, 1921. The War Department recommended as his successor Major Madison Pearson, who during the past two years had filled the position of second in command. No department is more vital to the efficiency of the institution than is the Military Department, and much depends upon the selection of the Director of this Department, because he is also the Commandant of Cadets.

It gives me pleasure to testify to the efficiency and loyalty of Major Pearson and his entire staff of five captains, one 1st lieutenant and three non-commissioned officers.

The assistance given by Capt. May, Capt. Durfee and Capt. Roderick, officers of the Military Department, to the various lines of athletic activity at the college, is highly appreciated and commended.

The Textile Department—C. S. Doggett, Director:

In no department of the college has there been a greater increase of interest than in the Textile Department. This is but natural when we consider that the cotton mill industry, next to agriculture, is the most important in the State.

The growth of the department in students is well indicated by the following growth in the Sophomore, Junior and Senior students during the past few years. The Freshman Class is common to all branches of engineering,—selections being made at the beginning of the Sophomore Class.

| Year | Seniors | Juniors | Sophomores | Total |
|---------|---------|---------|------------|-------|
| 1918-19 | 7 | 5 | 11 | 23 |
| 1919-20 | 6 | 13 | 31 | 50 |
| 1920-21 | 11 | 25 | 22 | 58 |
| 1921-22 | 19 | 19 | 28 | 66 |

In addition, during the last few years there has been quite an increase in our short courses in textile, as shown by the following figures—

| Year | Special Text | Fed. Board | Total |
|---------|--------------|------------|-------|
| 1919-20 | 5 | 5 | 10 |
| 1920-21 | 14 | 26 | 40 |
| 1921-22 | 16 | 28 | 44 |

The Bureau of Markets, U. S. Department of Agriculture, is conducting in our Textile Department a very extensive series of tests on cotton, having special relations with the length and strength of fibre. This work is quite stimulating to our work of instruction. In addition to paying whatever expense is involved, the department gets a good deal of cotton and other materials after they have been used in the government tests.

The textile Department has a fair equipment, although additional funds are necessary to keep it up to the times. Eventually a better building should be provided for this instruction. The present building, designed on the lines of a cotton mill, is lacking in quiet class rooms and quiet laboratories away from the clatter and hum of looms and spindles.

As yet the value of the Textile Department in furnishing leaders for the cotton mill industry of the State has not been fully appreciated by the cotton manufacturers. If it were, we should have every year from every mill in South Carolina a number of promising young men who having mastered the practical details of cotton mill work, would be sent here for thorough training in textiles and related lines.

We have a two-year course in textile industry, but our degree course in textile engineering is predicated upon the same degree of engineering work and the same amount of cultural work as are our courses in civil, electrical and mechanical engineering.

The department still maintains touch with the industrial Smith-Hughes work being done in the State.

The Treasurer's Office—S. W. Evans, Treasurer:

The work of the Treasurer's office continues up to the high standard of previous years. With three assistants the Treasurer performs an immense amount of work necessitated by the detailed itemization of the Board's budget of college expenditures. In addition, during the past year all college accounts have been carried under the classifications of the Budget Commission, and some of them also under classifications of the Federal Department of Agriculture. The total funds actually handled by the Treasurer amounted to \$1,438,752.66, these expenditures being represented in not less than twenty or twenty-five thousand separate transactions.

The audit of the State Bank Examiner commends the work of the Treasurer in the highest terms, as does also the report of the Board of Visitors.

Public Utilities:

The Construction & Repair Division has finished a year of good work. The residences and public buildings are in good condition and the new plans made by the Executive Committee for the future will continue them in this condition at a minimum of expense.

The cost of operating the heat, light and water division during the last fiscal year was \$40,972.82, of which \$24,872.34 was paid from college and \$16,100.48 from cadet funds. The price of coal with freight added is still nearly double pre-war prices, and our labor is only slightly reduced from the peak prices of 1918.

The capacity of the power station having been reached, it was necessary to appropriate approximately \$25,000.00 to add an extra boiler and turbine generator, and to make changes in the power equipment from direct to alternating current. Of this total \$5,502.84 was expended in 1921-22. When these changes and additions are completed, we will have a system that will meet our needs for many years to come, and give us a feeling of security which we now lack.

With comparatively small expenditure last year, the campus has been greatly improved and beautified. It is one of our chief assets, because hundreds of people who pass daily over the main highway see only the campus and judge of the manner in which the college is carried on by the way in which the grounds are kept.

The Board of Visitors, in recommending that we should have several miles of hard surface road, indicated one of our greatest needs, but a need which will perhaps have to wait for many years, until other developments more imperative from a standpoint of college work have been accomplished. It is necessary at this time, however, to provide facilities for taking off the storm-water which involves us in heavy expense by repairs to the roads and sidewalks.

The development of the area in front of Barracks No. 1, the planting of trees and shrubs along the Experiment Station road, and the massing of shrubs and ornamental plants about the main buildings, mark very distinct progress in the work of beautifying our naturally beautiful campus.

Our telephone system, which now connects only the college offices, carries about fifty telephones, and the service is fairly satisfactory. When we had about convinced the Bell Telephone Company to install and operate a system here to meet the needs of our community, legislation was introduced and passed, in the face of which the company was unwilling to proceed with the installation, for fear of setting a precedent that might give trouble. Now that the law commanding them to install the system has been set aside by a permanent injunction, it is my hope that we will soon have a needed convenience which has become also a necessity of modern life.

The Calhoun-Clemson school, which serves the college community as well as the town of Calhoun and the surrounding territory, having complied with the Board's conditions, was paid the \$2,750.00 to aid in making necessary additions to the school building. The conditions met were that the school district should vote the full 14 mills for school purposes; that the school should be recognized as a state-aided high school; and that the citizens of the Clemson community would raise \$1,000 to add to the college contribution for buildings purposes. It is the clear and positive understanding that the college will never be called upon for further aid, either for maintenance or for buildings. This school is doing excellent work, and needless to say is a necessary adjunct of the college, because without proper school facilities, teachers and officers with children will not enter its service.

With the building up of the territory adjacent to the campus, the need for better police supervision becomes apparent

The creation of the position of Campus Marshall to become effective in September is an important step in the direction of regulation.

PART IV. STUDENT LIFE AND INTERESTS

The Cost of Education at Clemson:

It has always been the purpose of the Board of Trustees to keep the cost of education at Clemson as low as possible, consistent with reasonable contentment and efficiency. The rapid rise in the price of provisions and labor during the winter and spring of 1920 necessitated an increase in the charge of board to \$20.00, the highest price ever paid. This was reduced to \$18.00 and later to \$17.00 during the session under consideration, and will next session be further reduced to \$16.00 per month.

The following is an exhibit of the required charges. The cost of books, which varies from \$25.00 to \$35.00, depending upon the student's class and course, is not included.

For Session of Nine Months.

1921-1922.

| | |
|---|----------|
| 1. Board ----- | \$157.50 |
| 2. Laundry ----- | 13.50 |
| 3. Heat, light and water ----- | 20.25 |
| 4. Medical fee ----- | 12.15 |
| 5. Incidentals ----- | 9.00 |
| 6. Matriculation fee ----- | 3.00 |
| 7. Laboratory fee ----- | 2.25 |
| 8. Breakage fee ----- | 3.00 |
| 9. Student activity fee ----- | 12.00 |
| 10. Uniforms (maximum first year) ----- | 56.75* |
| <hr/> | |
| Total for nine months ----- | \$289.40 |

*—Less after first year.

This makes the cost per day for the session of 270 days approximately \$1.07. (Tuition, \$40.00, is not included in the above cost, as only a fraction of the student body who are financially able pay it.)

The R. O. T. C. students in all classes receive from the War Department an average of \$18.00 per session as commutation for uniform, and Juniors and Seniors in the advanced R. O. T. C. course receive in addition 30 cents per day as commutation for subsistence—a little more than half of what the college charges at \$16.00 per month. With these credits applied, and not counting scholarships, it will be seen that education at Clemson has been brought down to very low figures.

The Cadet Fund:

Not a dollar of the money paid by students for their living expenses is used by the college. Any accruing balance is carried forward for the benefit of the account in succeeding years. The following is a statement of the Cadet Fund for the fiscal year 1921-22.

Cadet Fund—1921-1922.

| | Received | Expended | Balance | Deficit |
|-----------------------------------|--------------|--------------|-------------|-----------|
| Miscellaneous | \$ 296.72 | \$..... | \$ 296.72 | \$..... |
| Subsistence | 153,769.62 | 148,030.17 | 5,739.45 | ..... |
| Room, heat, light and water | 16,070.70 | 16,100.48 | ..... | 29.78 |
| Laundry | 14,650.58 | 14,650.58* | ..... | ..... |
| Hospital | 12,110.29 | 10,100.60 | 2,009.69 | ..... |
| Uniforms | 29,304.37 | 29,387.58 | ..... | 83.21 |
| Incidentals | 6,999.54 | 6,135.60 | 863.94 | ..... |
| Activity Fees | 7,732.14 | 7,732.14 | ..... | ..... |
| Breakage | 2,875.87 | 2,875.87 | ..... | ..... |
| Diplomas | 477.85 | 471.95 | 5.90 | ..... |
| Totals..... | \$244,287.68 | \$235,484.97 | \$ 8,915.70 | \$ 112.99 |

Net Balance on 1921-22 business—\$8,802.71.

Summary to July 1st, 1922:

| | |
|--|-------------|
| Brought forward, July 1st, 1921 | \$7,848.49 |
| Bills payable, replacements, etc. | 3,197.19 |
| | <hr/> |
| | \$4,651.30 |
| Balance on 1921-22 business | 8,802.71 |
| | <hr/> |
| Carried forward, July 1st, 1922 | \$13,454.01 |

*\$1,891.36 laundry funds transferred to new laundry building.

History of Cadet Fund:

The history of the cadet fund for the eleven-year period of my administration may be of interest.

During this period, July 1, 1911 to June 30, 1922, the total receipts amounted to \$1,761,519.12 and the disbursements to \$1,750,552.78, the difference representing about six-tenths of one percent of the receipts.

The subsistence item alone for the same eleven-year period was—

Receipts ----- \$1,036,087.93

Disbursements ----- 1,023,236.20

The difference between these two figures being a balance of \$12,851.73, or an average of approximately \$1,000 per year—equal to the cost of operation for less than two days per year.

Messhall and Kitchen:

The fire which partially destroyed the kitchen commissary and serving room and damaged or destroyed most of the equipment, proved as is usual in such cases, a blessing in disguise. The rebuilt plant is one of the best in the country, and sufficient in size to meet any reasonable demands that the future of the college may bring. The messhall and kitchens are screened, have tiled floors, are well lighted, heated and ventilated, and in every material way are prepared to give the best service for the money paid.

Barracks Accommodations:

Our increase in attendance has brought additional problems in the matter of room accommodations. In a great many rooms we are compelled to house three students where we should have only two. Not only do three crowd the rooms, but such an arrangement militates against good study. The building of another dormitory is fast becoming an acute necessity if we are to grow at all. We would be unable to accommodate our present attendance but for the fact that a number of our vocational students, many of whom are married, live out of barracks

The Cadet Hospital:

The health of the student body during the session has been unusually good. There was only one case of serious illness and no deaths at the college. I regret, however, to report that Mr. W. W. Mellette, Jr., died suddenly on April 8th, while at home on leave of absence. He had been away from the college for several weeks and was just on the point of returning when he was stricken and died.

During the latter part of February and early in March we had quite an epidemic of respiratory diseases, but for a second time escaped the usual epidemic of measles and mumps.

The hospital, although not a building well designed for its purposes, has continued up to its usual standard of excellent service. During the session the surgeon admitted to the hospital 395 separate cases and in addition treated a great many federal board students at their homes.

Discipline:

Looking over the session from a disciplinary standpoint, it was such a mixture of good and bad that it is difficult to say whether it was up to the usual standard or not. Prior to April 1st, there were comparatively few cases of discipline and the mass conduct of the students was exceptionally good. However, the individual demerit record of the corps was exceedingly good. The average for the three terms showed that 41.1 percent of the cadets received no demerits and that 75.46 percent received not more than 20 demerits,—20 being the limit of eligibility for the honor roll. Only one student exceeded the term limit and two the sessional limit, and under the Regulations these were required to withdraw from college. Under their pledge four students were required to withdraw because of hazing. The Discipline Committee held 28 trials—4 during the 1st term; 5 during the 2nd term; and 19 during the 3rd term. These trials resulted in 12 dismissals, and 8 suspensions. In addition, 8 students were given local punishments by the Committee.

Religious Influences:

During the session covered by this report we have been fortunate in having strong preachers in most of the local churches. The number of students in the Bible Classes conducted in barracks was most encouraging.

Every cadet is required to attend a 15-minute devotional exercise every morning in chapel, except on Saturday and Sunday, and unless he be a Jew or a Catholic, is required to attend divine services at the church of his choice every Sunday morning.

The introduction of the English Bible as an optional study in our courses is a step in the direction of religious training and education.

Recreation and Student Affairs:

Clemson College is one of the first to set up the control of intercollegiate athletics as a part of the regular college organization. At the December 1921 meeting of the Board of Trustees, By-Laws were adopted by which athletics was organized as a regular Division of the college in the Department of Student Affairs. The Athletic Director or Coach is a full professor and member of the faculty, the only difference in his status being that he is not paid from college funds but from the student activity fee and the receipts of athletic contests. These receipts, however, are handled through the Treasurer's office and disbursed just as are other college funds.

The action of the Board of Trustees in thus coordinating the athletic work with the collegiate work has met with general public approbation. The State newspaper in an editorial on May 6th, after reviewing what the Board had done, makes the following comment—

"Thus the conduct of athletics at Clemson is a part of the college routine; the President and the Faculty not only share in responsibility for it, but are enabled to exercise control of it. A condition wholly different from that existing in most institutions is thus brought about. The coach or athletic director is not an outsider in the pay of students and alumni, but occupies a relation to the college identical with that of other college authorities and inseparable from it.

"In The State's opinion the Clemson Trustees have in this way taken a long step in the solution of a problem constantly growing in perplexity and in embarrassment. * * * Nothing that The State can think of prevents other institutions in South Carolina from adopting a similar plan."

PART V. THE PUBLIC SERVICE

Clemson College is the agent of the Legislature in doing practically all of the public service which has an agricultural background. This is as it should be, because the college as a non-political and scientific organization is better prepared to do certain types of regulatory work than is any other agency in the state. The Extension Service has representatives in every county in the state, and this state-wide organization is of great assistance in research and regulatory activities as well as in Extension Service. Most colleges dislike regulatory service because of its police features. Clemson, however, has always

felt that the benefits to the people were sufficient to justify the Legislature in making the college its agency even in lines of work which inevitably must make some enemies for the college.

The Public Service work of the college is comprehended under (a) **Agricultural Research**; (b) **Extension Service**; and (c) **Regulatory Work**, and will be discussed in that order. The total budget for these lines of Public Service is shown on the next page. It will be noted that the total reaches the sum of \$661,160.31, although the expenditures from state appropriations reached only \$222,291.86 of this total. In other words, South Carolina is getting about \$2.00 for every dollar it appropriates for lines of service in which 85 percent of our people are vitally interested. The State's appropriation is less than 4 percent of the total legislative budget for 1922, and represents all that South Carolina contributes to that interest.

Expenditures for Non-Collegiate Public Service Fiscal Year 1921-22.

| No. | Kind of Service | From State Appo's | From U. S. Appo's | From U. S. D. A. Funds | From Counties, Sales, etc. | Totals |
|--------|-----------------------|-------------------|-------------------|------------------------|----------------------------|----------------|
| 1. | Agricultural Research | (a) \$ 49,083.73 | \$ 30,000.00 | \$ | (g) \$ 2,342.93 | \$81,426.66 |
| 2. | Extension Service | (b) 94,147.00 | 147,902.57 | 32,952.00 | (h) 117,422.97 | (i) 392,424.54 |
| 3. | Live Stock San. Work | (c) 51,430.06 | ..... | 15,510.14 | ..... | 66,940.20 |
| 4. | Tick Erad. | (d) 15,679.68 | ..... | 38,185.43 | ..... | 53,865.11 |
| 5. | Hog Cholera Serum | ..... | ..... | ..... | 31,623.12 | 31,623.12 |
| 6. | Slaughter Dis. Stock | (e) 2,118.42 | ..... | ..... | ..... | 2,118.42 |
| 7. | Crop Pest Commission | (f) 9,832.97 | ..... | ..... | ..... | 9,832.97 |
| 8. | Fert. Inspec. & Anal. | ..... | ..... | ..... | 22,929.29 | 22,929.29 |
| TOTALS | | \$222,291.86 | \$177,902.57 | \$ 86,647.57 | \$174,518.51 | \$661,160.31 |

Note—Appropriations for Calendar year —(a) \$50,000.00; (b) \$110,862.85; (c) \$50,000.00; (d) \$20,000.00 (e) \$2,000.00; (f) \$10,000; (g) Sale of Farm Products; (h) \$103,276.97 from counties, \$14,146.00 Mics. Sources; (i) \$123,558.29 for Home Demonstration Work by Winthrop College.

Agricultural Research—H. W. Barre, Director

Agricultural research is at the basis of agricultural teaching and agricultural extension. Although it lacks the popular appeal of extension or of regulatory service which reach directly the farms of the people, yet without agricultural research there would be little to extend through the extension service and little would be known of how to combat animal diseases and insect pests.

The appropriations for research work are shown in the foregoing table from which it will be noted that out of a total for this purpose of \$81,426.66, South Carolina appropriated \$50,000.00. This was used largely in the support of the branch stations at Summerville and at Florence.

The Agricultural Research work includes—

1. The parent experiment station at the college, including the college farm and the college laboratories in the Agricultural Department.
2. The branch stations located at Florence and at Summerville.
3. The cooperative agricultural research carried on with individual farmers in different parts of the state.

A full account of these activities is contained in the admirable report of the Director of Research, (see page 123). Probably the most important research work from an economic standpoint consists in the fertilizer experiments which for many years past have been carried on under ideal conditions at the Florence Station. The discoveries made here as to the best type and amount of fertilizers to be used probably saves the farmers of South Carolina every year on their million dollar bill for fertilizers more than the cost of operating this station for decades. Research along lines of agricultural problems of state-wide importance can be made a very profitable investment even when only a little is accomplished. For instance it is estimated that the discovery of a boll weevil control method which would add one more boll of cotton to every cotton stalk in South Carolina would add a half million dollars to the wealth of the State.

The Experiment Station is deeply interested in the present acute situation as regards the boll weevil. Of course no investigation under South Carolina conditions could be carried on until the weevil arrived, although as far back as 1916 the college sent a Commission to the boll weevil territory, and immediately on its return published a bulletin warning the farmers to prepare by practicing diversification and learning to raise and handle other than cotton crops. Several of the most important methods of control were this year tested out at the Florence and at the college station. Unfortunately, the early infestation was so light as to make the results inconclusive at these places.

The Experiment Station is not wedded to any one method of control, having an open mind to any measure which offers a reasonable promise of relief. However, in advising farmers during the spring of 1922, it could do no more nor less than to advocate the only method behind which there was any considerable amount of scientific or experimental data—namely the method of dusting developed by the U. S. Department of Agriculture. The experience of the past season shows conclusively that calcium arsenate dust can be used with profit in any section of South Carolina. In the experiments carried on by the Station, the cost per application per acre averaged from seventy-five cents to one dollar and six cents; the number of applications from five to eight; and the profit from twelve to sixty dollars per acre. It is needless to say that the Experiment Station will continue to put special emphasis on boll weevil control during the coming season with whatever funds are available for the purpose.

At the close of the fiscal year a number of agricultural accounts which had been operating on a reinvestment basis, and some of which were carrying considerable overdraft, were squared up and transferred to the Experiment Station under the sale of farm products. The total amount of overdraft on these accounts was \$43,418.62. This amount represents mainly a book overdraft and is wholly or in part offset by increased farm and live stock assets which do not appear in the form of cash. The revolving accounts transferred were—The College Farm; The Animal Husbandry Division; The Dairy Herd; The Creamery; and The Veterinary Division.

The Extension Service—W. W. Long, Director.

The total funds available for Extension Service are shown in the preceding tabulation to be \$392,424.54. Of this amount \$32,952.00 was disbursed by the Treasurer of the United States, and \$103,276.97 by county treasurers, in both cases on vouchers approved by our Director of Extension. Of the total amount expended for Extension Service, Winthrop College acting as our agent, expended \$123,558.29 for Home Demonstration work for women. Needless to say this work was done with that thoroughness which characterizes every task which Winthrop College undertakes.

The Smith-Lever Act was accepted by the Legislature in 1914. The required State appropriation under this Act increased annually from 1914 until it reached its maximum in 1922 at \$110,862.85 for the fiscal year July 1, 1922 to June 30, 1923. At this annual figure it will continue. Under the Smith-Lever Act the Federal government was to put up an equal amount plus \$10,000. Due however, to additional appropriations made during the war period, the federal government is actually contributing per fiscal year \$156,014.49.

The Extension Service is becoming more and more a vital part of the state's life. In every agricultural emergency and for every kind of agricultural service the people turn to the college as their first and authoritative source of help and information. In all state-wide movements for agricultural improvement, and especially during the past year in the organization of state-wide marketing associations, the Extension Service has rendered unique and valuable service.

During the year under consideration the policy of decentralization has been followed to the extent of organizing at each of the three district headquarters a staff of specialists to work in the particular district. This has resulted in greater economy in traveling expenses, and in bringing the specialists more directly in contact with the county agents and the farmers whom they have to serve.

Mr. Long's admirable report covering the Extension Service for the year begins on page ~~141~~ of this report. Its reading must convince any one of the wide-spread value of the Extension Service, never greater than in this time of depression and demoralization among our farmers. So thoroughly is the Extension Service entrenched in the confidence of the people

that our greatest difficulty today is in meeting the many demands made upon the agents and upon the specialists. The greatest task in the Extension Service will always be the selection of satisfactory men for the positions of county agents. The value of a good agent cannot be estimated in terms of salary, and any salary is too great for an agent who is a misfit. Only through a course of years and by careful selection based solely upon merit will all counties be supplied with just the type of men they need. In this connection it is the policy of the extension force to donate \$1,500 to the salary of each county agent. The total salary which the agent receives depends upon the contributions from the county as well as from the college, and in county agents as in everything else, the higher salaries attract the best men.

Regulatory Service:

The regulatory service of the college includes the following lines—

1. Fertilizer inspection and analysis.
2. Crop Pests and diseases.
3. Tick eradication.
4. Live stock sanitary work.

1. Fertilizer Inspection & Analysis—(For full reports, see (pages 171 and 173))

Under the laws of the state the Board of Trustees is charged with the inspection and analysis of commercial fertilizers sold within the state. A committee of the Board of Trustees known as "The Board of Fertilizer Control" gives special oversight to the enforcement of the fertilizer laws. Mr. J. E. Wannamaker of St. Matthews is the Chairman of this Committee.

The work of inspection is under the immediate charge of Mr. H. M. Stackhouse, Secretary of the Board, and is supported by the fertilizer tag tax. The Work of analysis is done by skilled and experienced chemists in the Chemistry Department of the college under the supervision of the Chief Chemist, Dr. R. N. Brackett. Full reports from both of these officers are made parts of this report.

Mr. Stackhouse's report of the 1921-22 sales shows 477,336 tons of fertilizer and 29,732 tons of cotton seed meal. The total tonnage was 507,068 tons as compared with 616,280 tons

in 1920-21 and 1,253,890 tons in 1919-20. The 1921-22 sales were the lowest since 1905.

The total number of samples analyzed was 769 as compared with 799 in 1920-21 and 1,802 in 1919-20.

2. Crop Pests and Diseases—For full report, see page 188)

The Crop Pest Commission is constituted under the laws of the state to safeguard the agricultural interests against the importation of diseased seed, nursery stock, and the introduction and spread of insect pests and plant diseases. The Agricultural Committee of the Board constitutes the Crop Pest Commission, and Mr. J. E. Wannamaker of St. Matthews is the Chairman.

Never before have the fungus and bacterial diseases of plants taken a larger toll, and never have insect pests been more active and destructive. The plant disease survey of the U. S. Department of Agriculture estimate the loss by plant disease to South Carolina on its seven major field crops at more than twenty million dollars. Not taking into account the damage wrought by other insects, which is heavy, especially in the trucking sections of the State, the loss to the cotton crop alone, due to the boll weevil, probably represents double the amount of the figure above given. Nothing today stands between the farmers and ruin except the scientific men who are doing research work to discover methods to combat plant disease and insect ravages. The State Entomologist and the State Pathologist and their assistants keep up the defenses against invasion and devise new methods to fight new enemies which break through and enter the state.

Any one unfamiliar with the work of the Crop Pest Commission will be interested and astonished to read of its many activities in the full report which is appended hereto. Probably no investment of \$10,000 by the State brings larger returns than the appropriation which supports this work.

3. Tick Eradication—(See State Vet.'s report, page 202)

The remaining stronghold of the cattle tick is in the coastal plain section of the state. Gratifying results were obtained in those counties and areas where the stock law was observed. In a great many sections, however, no effort was made on the part of live stock owners to keep up their stock, and as a result no substantial progress was made in tick eradication. Unfor-

tunately the stock law contains no special authority for its enforcement. Quoted from the State Veterinarian's report—

"The beneficial features of tick eradication are being reflected in those sections where it is now safe to import the better breeds of cattle, both of the beef and dairy types, and the farmer who has taken advantage of the situation and has established a herd of beef or dairy cattle is the one who is feeling less the effects of the cotton boll weevil and the general financial depression. We feel safe in making the prediction that in a very few years cattle raising will be one of our principal industries."

The expenditures for this work from January 1st to October 31st were as follows—

| | |
|--------------------------|-------------|
| From State Funds ----- | \$14,015.94 |
| From Federal Funds ----- | 44,798.97 |

It will be noted that the federal department has generously contributed more than three dollars for every dollar that the State has spent.

4. Live Stock Sanitary Work—(See State Vet. report, page 202)

The Live Stock Sanitary Work includes tuberculosis eradication, hog cholera control, the investigation and control of contagious outbreaks, and quarantine activities against the introduction of diseased live stock.

This work is supported by an annual appropriation of \$50,000. The headquarters for the work is the Liberty National Bank Building, Columbia, S. C. Here the State Veterinarian has his office, and the Assistant State Veterinarians not stationed at strategic points in the State, work out from Columbia. Here too a laboratory is maintained for the purpose of making tests in order to confirm the diagnoses made by the Field Veterinarians. In this laboratory is carried on important research work relating to the parasites which are to be combatted in South Carolina.

The force that carries on this work consists of the State Veterinarian, jointly employed and paid by the college and the U. S. Department of Agriculture, ten veterinarians stationed at different points in the State, eight veterinarians and inspectors having supervision in the tick eradication work, and twenty-six private veterinarians who act as deputy veterinarians on a per diem basis.

The magnitude of the work carried on by the Columbia office will be appreciated when it is stated that 1,054 herds were tested during the past year for tuberculosis. In those herds were 19,398 dairy cattle, of which number 217 were found to be tubercular and were killed. Since November 1, 1917, 54,910 cattle have been tested and 849 found to be tubercular. Since the transmissibility of tuberculosis from the dairy cow to the human being is no longer doubted, this work is of great importance from a public health standpoint.

The treatment of hogs for cholera is another one of the large activities carried on by this office. During the past year 61,000 hogs were treated. The total value of the serum and virus and other biologies which were distributed on a cost basis amounted to \$41,186.71.

The funds of this department include \$2,000 appropriated by the Legislature for diseased cattle which are destroyed under laws of the State.

The sale of hog cholera serum is handled on a revolving basis, no appropriation being required for the purchase of the serum, this being sold to farmers at cost. The treatment of the hogs and the control of outbreaks of cholera are handled by the Assistant State Veterinarians and their deputies and assistants.

CHAPTER II—1923

PART VI. APPROPRIATIONS FOR PUBLIC SERVICE
1923

The college is submitting exactly the same estimate for Public Service as in 1922. More work could be done if more money were available, but I take it that we should all recognize the conditions of the state and govern ourselves accordingly.

In the statement below is shown in the first column of figures the usual state appropriations and the other appropriations which are received in consequence thereof—

Non-Collegiate Activities—Public Service
1923

| Activity | S. C. Appro's | U. S. Appro's | U.S.D.A. Fund | Misc. | Totals |
|------------------------------------|---------------|---------------|--------------------------|--------------|--------------|
| | | | (a) | (b) | (c) |
| 1. Extension Service | \$110,862.85 | \$156,014.49 | \$ 32,100.00 | \$112,037.59 | \$411,064.93 |
| 2. Agricultural Research | 50,000.00 | ..... | ..... | ..... | 50,000.00 |
| 3. Crop Pests & Diseases | 10,000.00 | ..... | ..... | ..... | 10,000.00 |
| 4. Live Stock San. Work | 50,000.00 | ..... | (d) 17,950.21 | ..... | 67,950.21 |
| 5. Tick Erad. | 20,000.00 | ..... | (e) 50,951.30 | ..... | 70,591.30 |
| 6. Slaughter Dis. Live Stock | 2,000.00 | ..... | ..... | ..... | 2,000.00 |
| 7. Hog Cholera Distrib'n ..... | ..... | ..... | (Sales) (f) 50,000.00 | ..... | 50,000.00 |
| 8. S. C. Experiment Station ..... | ..... | 30,000.00 | (Sales) 35,475.00 | ..... | 65,475.00 |
| 9. Fert. Inspec. & Analysis ..... | ..... | ..... | (Tag Tax) 33,570.00 | ..... | 33,570.00 |
| Totals..... | \$242,862.85 | \$186,014.49 | \$101,001.51 | \$231,132.59 | \$761,011.44 |

Notes:

(a) (d) (e) Disbursed by Treas., U. S.

(b) Paid by County Treasurers.

(c) \$126,744.33 of this for Home Demonstration.

(f) Assumed figure based on past experience.

It will be noted from the above that for its appropriation of \$242,862.85 the state gets service which actually costs \$761,011.44, or over three dollars for every dollar of the state's appropriation. The above well established lines of public service are so well known to the citizenship of the state that little explanation should be necessary. Just a paragraph in regard to each will be given.

1. Smith-Lever Extension Service—\$110,862.85):

The State of South Carolina in 1914 accepted the terms of the Smith-Lever Extension Act, under which definite annual appropriations were to be made. These appropriations reached their maximum in 1922, and the figure for 1923 is the same as for last year, and will continue the same hereafter. It will be noted that the Federal Department appropriation to meet this state appropriation is \$156,014.49.

The Extension Service is the only state-wide agricultural organization supported by the state and by the federal department for the benefit of the people on the farms.

2. Agricultural Research—(\$50,000.00):

This is the same amount that has been appropriated heretofore and represents the necessary supplementary funds to support the research work at the college, at the coast station near Summerville, and at the Pee Dee Station at Florence. This \$50,000.00 represents the entire amount spent by South Carolina for research work in that great profession in which 85 percent of our people are directly concerned. A single discovery which will reduce the large fertilizer bill of the State, or save an additional boll of cotton, or check the ravages of some plant diseases or insect pest, may easily be worth to the State in a single year the cost of all its research work for several decades.

3. Crop Pests and Diseases—(\$10,000.00):

For this work no increase is requested. Perhaps no single appropriation for control work is more important or productive than this. But for the vigilance of the State Entomologist and the State Pathologist and their assistants, South Carolina would soon be the dumping ground for diseased seed, plants and nursery stock and be an unprotected territory for the invasion of plant diseases and insect pests. Many serious pests and diseases are at South Carolina's door and some of them

have already gained a foothold. The work of the Crop Pest Commission is the sole protection which the State has against serious loss. The U. S. Department of Agriculture in a recent publication estimated that the loss in South Carolina due to plant disease alone amounted to more than twenty million dollars annually.

4. Live Stock Sanitary Work—(\$50,000.00):

No increase in this appropriation over former years is asked, although double the amount could be well spent in the protection and promotion of an industry which represents in money more than the cotton crop of the state. The Live Stock Sanitary Board, which is in charge of the live stock sanitary work, is to live stock what the State Board of Health is to humans. Protection against the importation of diseased live stock, the control of contagious outbreaks such as hog cholera, anthracnose, blackleg, etc., and the testing of dairy cows for tuberculosis, are a few of the activities of our sanitary office located at Columbia. With the necessity under boll weevil conditions of turning to a more diversified agriculture, the amount and value of live stock has steadily increased. This is testified to by the excellent live stock exhibits at the last State Fair. As the industry increases the demand for veterinary service also increases. But we have not increased the usual appropriation which represents less than one-tenth of one percent of the value of the live stock in South Carolina expended for its protection.

Because of the need for quick service, the headquarters of this work has for some years been located in Columbia. Here the State Veterinarian has his office and laboratories, and from this point serum and biologics are dispensed. During the past year 61,000 head of hogs alone were treated under the supervision of this office; 15,050 consultations and interviews were held; 6,283 farms visited; 4,530 contagious outbreaks investigated; and 1,745 sanitary surveys made. During the year ending October 31st, 19,398 cattle were tested for tuberculosis.

The above are merely illustrative of the many lines of work in which the Columbia office and its staff of field veterinarians are engaged. A full account of activities will be found on page 202 of this report.

5. Tick Eradication—(\$20,000.00):

The amount for tick eradication likewise remains unchanged. But for the free range conditions which have for so long existed in the lower counties of the state, tick eradication in South Carolina would now be completed. During the past year the federal department has been most liberal with South Carolina in carrying on this work, contributing from January 1st to October 31st, 1922, more than three times the expenditure from state funds.

6. Slaughter of Diseased Live Stock—(\$2,000.00):

Reimbursement to live stock owners for animals destroyed in the control of contagious diseases is required by law. Because of the increase of interest in tuberculosis-free dairy cattle, the amount of last year's appropriation was not sufficient to pay the claims of 1922. The amount asked, \$2,000.00 is likely to be insufficient, but it was thought best not to increase any of the items for Public Service.

7. Miscellaneous—No Appropriation:

The work of fertilizer inspection and analysis, the South Carolina Experiment Station, and the sale and distribution of hog cholera serum, need no appropriations from the state, being supported by other funds—the fertilizer inspection and analysis from the fertilizer tax; the S. C. Experiment Station from the U. S. Hatch and Adams Fund and the sale of farm products; and the distribution of hog cholera serum from the receipts of sales.

8. Boll Weevil Control:

If satisfactory cooperative arrangements can be perfected with the U. S. Department of Agriculture, it is hoped that the Legislature will make an appropriation for the establishment of a boll weevil laboratory at the Pee Dee Station in Florence. The U. S. Department of Agriculture will almost certainly establish a station corresponding to the one at Tallulah, La., in this northeastern section of the cotton belt. South Carolina will get a maximum benefit if the station is located within its borders.

The needed appropriation will likely amount to \$25,000.00 and will be presented in the form of a joint resolution in the early days of the legislative session. To wait until the passage of the appropriation bill during the last days of the session

would be too late for experiments in 1923. If the joint resolution is approved by the General Assembly, the appropriation provided can be made a part of the appropriation bill, but in the meantime the college and federal authorities can go forward with the selection of their personnel and the planning of their experiments. The importance of testing out all promising methods of boll weevil control as rapidly as possible so that our people may get the benefit of these experiments, is too important to need discussion.

In presenting these appropriations, the college does not come as a suppliant, begging that they be made. The college regards itself rather as an **agent of the Legislature** to carry out willingly and efficiently these lines of Public Service to whatever extent the General Assembly is willing to support. The duty of the college is to recommend what is needed. It is for the Legislature to say how much of the service indicated by us as needful shall be done.

PART VII. THE FINANCIAL OUTLOOK.

The establishment of Clemson College at the homestead of John C. Calhoun is one of the romances of education. Those who are fond of history are referred to page 222 of this report, where will be found a brief history of Mr. Clemson's life and his connection with the establishment of Clemson College.

In 1889 the State accepted the Clemson Bequest, using in the Act of Acceptance the following words—

"The State of South Carolina hereby expressly declares that it accepts the devise and bequest of Thomas G. Clemson, subject to the terms and conditions set forth in his last will and testament."

In 1890 an Act was passed devolving upon the college the duty of inspecting and analyzing fertilizers, and providing that after the expense of the inspection and analysis were paid, the balance should go to the college for its **erection and maintenance**.

Since the passage of the Act of 1890, college support represented by the fertilizer tax has had a variable, but until recently, a steadily increasing growth. This will be seen from the following data—

Fertilizer Tag Tax—By Fiscal Years.**30 Years—1890 to 1922**

| 1890-1899 | | 1910-1919 | |
|---------------------------------|-------------------|----------------------------------|-------------------|
| 1890 | -----\$25,000.00* | 1910 | -----\$226,980.96 |
| 1891 | -----56,868.10* | 1911 | -----264,374.08 |
| 1892 | -----36,221.48 | 1912 | -----221,000.00 |
| 1893 | -----50,676.00 | 1913 | -----231,500.00 |
| 1894 | -----43,499.06 | 1914 | -----276,000.00 |
| 1895 | -----30,317.75 | 1915 | -----155,859.76 |
| 1896 | -----51,273.37 | 1916 | -----171,018.52 |
| 1897 | -----60,600.00 | 1917 | -----216,432.49 |
| 1898 | -----65,020.00 | 1918 | -----268,721.68 |
| 1899 | -----59,192.50 | 1919 | -----258,477.10 |
| Average -----\$47,866.83 | | Average -----\$229,036.46 | |

*Record not clear

| 1900-1909 | | 1920-1921-1922 | |
|----------------------------------|-------------------|-------------------------------------|-------------------|
| 1900 | -----\$ 39,724.17 | 1920 | -----\$313,472.54 |
| 1901 | -----100,794.89 | 1922 | -----126,118.07 |
| 1902 | -----97,476.09 | 1921 | -----167,505.16 |
| 1903 | -----85,200.00 | | |
| 1904 | -----127,437.44 | | |
| 1905 | -----118,820.12** | | |
| 1906 | -----158,256.44 | | |
| 1907 | -----150,323.48 | | |
| 1908 | -----168,115.28 | | |
| 1909 | -----177,271.74 | | |
| Average -----\$122,341.96 | | Total—30 Yrs. \$4,599,548.27 | |
| | | 30-Yr. Average \$139,380.00 | |

In asking for a change of financial status, it is appropriate to take a census of what has been accomplished in the course of the thirty years during which the college has lived and grown on the fertilizer tax—supplemented by comparatively small amounts from other sources.

The measure of accomplishment will be found (a) in the property acquired; (b) the educational service performed; (c) in the public service by which the college has extended the campus to include the whole state.

(a) Property Acquired:

The title to the lands of Clemson College rests in the State of South Carolina. These lands have increased from the 854

acres contained in the original tract to 1,560 acres at the college, 600 acres at the Coast Station near Summerville, and 200 acres at the Pee Dee Station within the city limits of Florence. Buildings representing a value of \$1,121,557.45 have been erected on the State's property, and nearly a half million dollars is represented in equipment, books, machinery, etc.

The following is a summarized inventory to June 30, 1922—

| Classification | Cost Value | Estimated Present Value |
|--------------------------------------|----------------|-------------------------|
| 1. Office equipment ----- | \$ 52,605.84 | \$ 50,655.28 |
| 2. Household equipment ----- | 52,524.39 | 45,881.86 |
| 3. Educational & Rec'nl Equip. ----- | 204,150.10 | 229,409.07 |
| 4. Library equipment ----- | 47,577.20 | 48,820.85 |
| 5. Vehicles ----- | 16,671.30 | 11,930.51 |
| 6. Live stock ----- | 25,863.87 | 45,233.02 |
| 7. Medical and Surg'l Equip. -- | 2,105.50 | 1,743.53 |
| 8. Military equipment ----- | 3,510.53 | 2,840.10 |
| 9. General plant ----- | 127,099.33 | 133,370.11 |
| 10. Buildings ----- | 790,002.45 | 1,121,557.45 |
| 11. Real estate ----- | 79,882.00 | 354,479.00 |
| Equipment totals ----- | \$1,401,992.51 | \$2,045,920.78 |
| 12. Supplies - ----- | 68,068.84 | 67,458.98 |
| Totals ----- | \$1,470,061.35 | \$2,113,379.76 |

(b) Educational Service Performed:

During the thirty sessions of the college, approximately 2,000 young men have graduated in the four-year courses, and the total annual enrollment in all courses for the thirty years has averaged approximately 675 men. For this session and last the average is over 1,000. All of our graduates have been in technical courses, such as agriculture, engineering, chemistry, textile industry, etc., and are equipped to take an important part in the economic development of the state and nation.

(c) Public Service:

The Trustees went a step further than mere compliance with the original bargain which gave to the college for its **erection and maintenance** what remained of the fertilizer tax after paying the cost of inspection and analysis. As this fertilizer tax grew, an increasing effort was made to take the college to the people, and to extend agricultural research to the

other principal soil types of the state. Extension service was early begun, branch stations near Summerville and Florence were established for agricultural research, and cooperative experimental work with farmers was undertaken to test out new varieties and new agricultural methods.

In addition to these activities voluntarily undertaken by the college, the Legislature from time to time placed upon the college regulatory and other duties, without appropriations to support them. These added duties drew heavily upon the college resources and took money that was badly needed to complete the college plant. Tick eradication, live stock sanitary work, plant diseases and nursery control, agricultural and textile scholarships, were added from time to time, the cost of these aggregating \$747,325.16, and representing just about what is now needed in the way of buildings and equipment with which to complete the college plant.

The following exhibit gives in detail the items that entered into this expenditure—

Expenditures From Fertilizer Tag Tax for Public Service.

1890 to June 30, 1922.

| | |
|-------------------------------------|---------------|
| 1. Extension service ----- | \$ 127,692.04 |
| 2. Live stock sanitary work ----- | 109,983.25 |
| 3. Crop pests and diseases ----- | 33,637.68 |
| 4. Branch experiment stations ----- | 122,739.98 |
| 5. Agricultural research ----- | 30,780.86 |
| 6. Scholarships ----- | 291,429.36 |
| 7. Miscellaneous ----- | 31,061.99 |

Total of Service not anticipated in

| | |
|--|---------------|
| original Bargain ----- | \$ 747,325.16 |
| 8. Fertilizer inspection and analysis -- | 575,376.81 |

Total ----- \$1,322,701.97

Summary:

With truth and accuracy it might be said that without appropriation from the State Treasury, the state has acquired property valued at \$2,113,379.76; has received public service worth \$1,322,701.97; has had graduated nearly 2,000 young men in technical lines, and trained every year for 30 years an average of 675.

The Growth of the College:

Clemson College, whether measured in terms of student attendance or of disbursement for its many activities, has grown far beyond the expectation of its founders and of the Legislature which gave to the college the fertilizer tax in lieu of a direct appropriation for support.

In Attendance:

The growth in attendance is shown in the following table and represents every year the limit of our capacity. Far greater growth would be recorded had we been able to provide dormitory capacity and other facilities for greater numbers.

The exhibit below shows the growth in student attendance from 1893 to the end of the session 1922-23—

Growth of Clemson College in Attendance

1890-1922

| | |
|--|-------|
| 1. Average—7 sessions ending 1900----- | 451 |
| 2. Average—10 sessions ending 1910 ----- | 606 |
| 3. Average—10 sessions ending 1920 ----- | 809 |
| 4. Attendance 1920-21 ----- | 847 |
| 5. Attendance 1921-22 ----- | 1,007 |
| 6. Attendance 1922-23 (estimated) ----- | 1,010 |

(Above figures do not include Summer School)

In Activities:

On the basis of expenditures, which are a measure of increased attendance and activities, the growth of the college has been even more significant. Taking a period of only twelve years, (this covering my administration as Acting President and as President), and beginning with a smaller attendance and practically no public service, except the fertilizer inspection and analysis, the expenditures due to growth in numbers and college facilities and new lines of service undertaken have gone from \$371,888.78 to \$1,527,691.27.

Just how this increase has come about is shown by the following exhibit, which covers all funds administered by the college, including funds from counties, legislative appropriations, U. S. government, cadets, etc., etc.

**Growth of Clemson in Disbursements.
1909-10 — 1921-22.**

| Year | Disbursement |
|--------------|---------------|
| 1909-10----- | \$ 371,888.78 |
| 1910-11----- | 478,273.24 |
| 1911-12----- | 521,014.24 |
| 1912-13----- | 503,208.26 |
| 1913-14----- | 515,478.06 |
| 1914-15----- | 597,984.53 |
| 1915-16----- | 589,398.02 |
| 1916-17----- | 664,744.35 |
| 1917-18----- | 775,665.10 |
| 1918-19----- | 1,041,537.48 |
| 1919-20----- | 1,234,802.57 |
| 1920-21----- | 1,508,935.71 |
| 1921-22----- | 1,527,691.27 |

The many-sidedness of the college is shown by the following exhibit of its activities for 1923—

**Activities of The Clemson Agricultural College
With Sources of Support.**

Calendar Year 1923.

| | |
|--|---------------|
| 1. Collegiate work ----- | \$ 383,343.64 |
| Fertilizer tax, State appros. and Misc.) | |
| 2. Educational disabled soldiers ----- | 12,938.35 |
| (Veterans' Bureau) | |
| 3. Vocational teacher-training ----- | 27,455.00 |
| (State Board, Vocational Education) | |
| 4. Agricultural extension service *----- | 411,064.93 |
| (State appropriations, U. S. and county funds) | |
| 5. Agricultural research ----- | 115,475.00 |
| (State appropriations, U. S. funds, sales) | |
| 6. Agricultural regulatory service ----- | 234,471.51 |
| (State appropriations, U. S. funds, sales) | |
| 7. Revolving and transfer accounts ----- | 64,307.00 |
| (Sales and transfers) | |
| 8. Cadet funds ----- | 233,593.61 |
| Receipts from cadets for board, etc) | |
| 9. Cadet deposits ----- | 66,441.67 |
| (Cadet deposits) | |

Total ----- \$1,549,090.71

*\$126,744.33 of this for Home Demonstration Work by Winthrop College.

All of the items of the above list, except the first, are insured by State and U. S. appropriations and other sources of revenue.

It is the heart of the enterprise—the teaching work of the college—which is in jeopardy.

The Fertilizer Tax No Longer Adequate:

For nearly a third of a century the Trustees have kept strictly to the original bargain, and Clemson College has gone forward without appropriations for its collegiate work or appropriations for buildings and equipment.

As the average fertilizer tax increased, the Trustees developed the college in size and diversity, always putting aside a little for buildings and equipment which had to go hand in hand with growth in numbers and educational facilities.

However, with the beginning of the year in 1914 conditions changed radically. The fertilizer tax fluctuated greatly, reaching a low figure during the year following the "buy-a-bale" movement. Costs also greatly increased. Not only was there no longer any margin left for buildings and equipment, the operating costs reached a figure which required a fertilizer tax around \$250,000.00 to meet the cost of inspection and analysis and the costs of college operation.

In the face of an increase of 20 percent in attendance in 1921 the fertilizer tax dropped from \$313,472.54 (the figure of 1920) to \$167,505.16 in 1921. That year it was necessary to borrow \$112,842.11 of the \$150,000.00 loan authorized by the General Assembly at their 1921 session. In 1922 the tax still further declined to \$126,118.07, the lowest in seventeen years. Again the deficit had to be met by a loan, this time for the full amount authorized, \$150,000.00. These loans were made from the State Treasurer and not made from the Sinking Fund Commission.

The deterioration of the financial condition of the college is clearly shown by the following statement—

Financial Conditions Without State Appropriations.

| Fiscal Year | | | Indebt- | Balance Carried Forward | Actual Deficit |
|----------------|--------------|------------|------------|-------------------------|----------------|
| Ending | Fert. Tax | Loans | edness | | |
| 7-1-1920 | \$313,472.54 | \$ None | \$ None | \$154,413.03 | \$ None |
| 7-1-1921 | 167,505.16 | None | None | 77,209.35 | None |
| 7-11-922 | 126,118.07 | 112,842.11 | 112,842.11 | 71,502.87 | 41,339.24 |
| | Estimated | | | Estimate | |
| 7-1-1923 | 150,000.00 | 150,000.00 | 251,557.90 | 58,290.12 | 193,267.78 |

It will be seen from the above that the college reserve carried forward on July 1, 1920 to pay the operating costs during the barren six months, July 1st to December 31st, has been consumed, and at the close of this fiscal year the college will be in debt \$193,267.78, with the added burden of having to pay one-tenth of the principal sum and 6 percent interest until the debt is liquidated. Evidently the end of the borrowing policy has been reached. Our loans were made with the hope that the fertilizer tax would come back to normal figures and we could repay what we had borrowed just as we repaid in 1916 the loan of \$62,400.00 out of the fertilizer tax receipts of the three succeeding years. But it is my deliberate judgment that not for many years, if ever, will the fertilizer tax be sufficient to meet even our bare operating necessities, increased as they are by increased attendance and still inflated costs of materials.

College Budget for 1923:

The detailed college budget for the calendar year 1923, and including all college funds, is in the hands of the Budget Secretary. It may be briefly summarized as follows—

College Activity.**Calendar Year 1923.****Estimated Expenditures:**

| | |
|--|---------------------|
| 1. Superintendence and Records ----- | \$ 30,583.68 |
| 2. Collegiate Instruction ----- | 288,747.03* |
| 3. Upkeep of Buildings and Grounds ----- | 33,021.91 |
| 4. Public Utilities ----- | 29,491.02 |
| 5. Summer School ----- | 1,500.00 |
| Total ----- | \$383,343.64 |

*Item 2 includes \$40,249.26 as 6 percent interest and one-tenth the principal on 1921 and 1922 loans from State Treasurer, and \$22,300.00 for scholarships.

Estimated Resources:

| | |
|--|---------------------|
| 6. Interest on Clemson Bequest ----- | \$ 3,512.36 |
| 7. Interest on Landscip ----- | 5,754.00 |
| 8. Morrill & Nelson Funds (U. S.) ----- | 25,000.00 |
| 9. Estimated Tuition and Fees ----- | 20,000.00 |
| 10. Estimated Rents and Misc. Receipts ----- | 23,000.00 |
| | <hr/> |
| | \$ 77,266.36 |
| 11. Estimated Fert. Tax 1923 -- \$150,000.00 | |
| Less cost of Inspection ----- | 33,570.00 |
| | <hr/> |
| | 116,430.00 |
| | <hr/> |
| | \$193,696.36 |
| 12. Est'd. Bal. on 1922 Loan, Jan. 1, 1923 ----- | 58,775.98 |
| | <hr/> |
| | \$252,472.34 |
| 13. Necessary State Appropriation ----- | 130,871.30 |
| | <hr/> |
| Total ----- | \$383,343.64 |

Assistance Needed.

If the Legislature will **authorize** the expenditure of the items of income 6 to 11 inclusive, the direct appropriation would not exceed \$130,871.30. Such a course is recommended by our Board of Visitors, and for obvious financial reasons would be the most expedient solution under present financial conditions. To make the total appropriation of \$383,343.64 would load the State Budget with a large increase not really representing an additional cost to the state.

If the state sees fit to cancel the loans which have been made from the State Treasurer (on the sound theory that there is no use in appropriating money with which to pay off a debt to itself) then the amount of appropriation requested may be reduced to \$90,622.04.

If the fertilizer tax in 1923 goes beyond the estimated figure, then the appropriation can be curtailed by whatever amount the fertilizer tax exceeds \$150,000.00. With the realization that ample fertilizing is one of the factors in the control of the boll weevil, it is entirely possible that the fertilizer tax may go to \$200,000.00, or higher, in which case only \$40,622.04, or less, of the appropriation made would be required.

General Comments on Budget:

The budget above presented represents a normal budget as appropriated by the Board of Trustees at their meeting last July for the fiscal year 1921-22.

With the exception of \$40,249.26, which must be forthcoming during 1923 as a payment on our loans, there are no increases in the totals submitted for the calendar year 1923.

No increases in salary over those of 1922 are included.

The cost of materials, shop and laboratory equipment, etc., is somewhat increased because of the increase of 20 percent in attendance.

Buildings:

Because of present financial conditions, no buildings are included in the 1923 budget, although our dormitories are now inadequate to meet present demands, and the college plant lacking in facilities that every first-rate college should have. The following exhibit shows the necessary buildings for present and prospective attendance, with approximate cost—

| Buildings | For present(1,000) Attendance | For Attendance of 1,200 | For Attendance of 1,500 |
|--|----------------------------------|----------------------------|----------------------------|
| 1. Dormitories | \$ 75,000.00(1) | \$150,000.00(2) | \$225,000.00(3) |
| 2. Gymnasium | 125,000.00 | 125,000.00 | 150,000.00 |
| 3. Hospital | 50,000.00 | 50,000.00 | 65,000.00 |
| 4. Library | 75,000.00 | 75,000.00 | 75,000.00 |
| 5. Live Stock Pavilion | 10,000.00 | 10,000.00 | 10,000.00 |
| 6. Physics Building | 75,000.00 | 75,000.00 | 75,000.00 |
| 7. Horticult. & Ext'n Bldg. | 50,000.00 | 50,000.00 | 50,000.00 |
| 8. Textile Dept. Addition | 10,000.00 | 25,000.00 | 50,000.00 |
| 9. Agri. Hall Addition | | 25,000.00 | 25,000.00 |
| 10. Chapel Addition | | 25,000.00 | 25,000.00 |
| 11. Mess Hall Addition | | 20,000.00 | 25,000.00 |
| 12. Greenhouse | | 5,000.00 | 5,000.00 |
| 13. Shop Buildings | | 30,000.00 | 30,000.00 |
| 14. Chemistry Building | | | 50,000.00 |
| 15. Hard Surfaced Roads (2 miles) | 60,000.00 | 60,000.00 | 60,000.00 |
| 16. Additional Major Equip. | 10,000.00 | 28,500.00 | 42,300.00 |
| | <hr/> \$530,000.00 | <hr/> \$725,000.00 | <hr/> \$920,000.00 |
| 17. Totals | <hr/> \$540,000.00 | <hr/> \$753,500.00 | <hr/> \$962,300.00 |

The present **per capita cost** of education to the State of South Carolina is approximately \$300. With an attendance of 1,200, the per capita cost would be approximately \$275.00; and with 1,500, \$235.00.

Explanation of Budget

Item 1. Superintendence and Records—(\$30,583.68):

Under this heading are included the salaries and the cost of operating the offices of the President, the Treasurer, the Registrar and the Director of Student Affairs. Aside from salaries, the largest items are for travel, including the travel of Trustees, Boards of Visitors, Legislative Committees, etc., office supplies and miscellaneous materials entering into the operation of executive and clerical offices. There is no increase over the previous year.

Item 2. Collegiate Instruction—(\$288,747.03):

As in all colleges, the largest item of expense is the item of **salaries**. The scale of salaries at Clemson is very moderate. During the period of inflation the total increase in our salary account was only about 22 percent. Since the war, college salaries generally have not decreased—in fact, they are still on

the up-grade. At Clemson, however, no increase in salaries over those in force in 1922 is requested.

In technical colleges such as Clemson, salaries are usually higher than in non-technical colleges, because they have to compete with business corporations as well as with other colleges. In spite of that, the average salary at Clemson is probably lower than at any other state college for men in South Carolina, except at the negro college at Orangeburg.

The figures below, compiled by the U. S. Bureau of Education in December, 1922, shows the averages of 73 colleges and universities as compared with the averages at Clemson. At Clemson no rent-free houses or other perquisites are given. Each officer receives a cash salary and nothing more.

| | Pres. | Deans or Director, | Profs. | Assoc. Profs. | Asst. Profs. | Instr's... |
|--|--------------|-----------------------|--------------|------------------|-----------------|--------------|
| Averages 73 Colleges and Universities | \$8,482 | \$4,250 | \$3,392 | \$2,800 | \$2,300 | \$1,800 |
| Clemson Averages | 6,000 | 3,650 | 2,808 | 2,288 | 2,035 | 1,625 |

The item for **supplies** at a college like Clemson is necessarily large because of the consumption of steel, iron, wood, chemicals, glassware, etc., in its shops and laboratories. The upkeep of tools, machinery and apparatus used in teaching is also a large item. To illustrate—the expense of the Foundry Division is \$2,425.00; of the Wood Shop, \$1,425.00; of the teaching work in Dairying, \$3,906.66; in Horticulture, \$3,060.00. These costs incurred only by a technical college can neither be avoided nor reduced, unless the cost of labor and materials declines, and they increase in proportion to the number of students instructed. The college must pay these costs unless we follow the fashion of many colleges to require the students to pay a shop and laboratory fee to cover them.

The item for **educational equipment** is also large in a technical college. Evidently most of the colleges classify this under operating expense. It includes electrical instruments, microscopes, balances, pruning shares, agricultural implements, and

a hundred other items necessary to give technical instruction and to keep technical laboratories up to date. To withhold these necessary facilities for teaching would be to betray the trust of students whose money and precious time are being devoted to the pursuit of an education.

Under the head of "collegiate instruction" is also the cost of insurance, scholarships, payment of interest and principal on debt, etc., etc.

Item 3. Upkeep of Buildings and Grounds—(\$33,021.91):

Clemson College is a small village consisting of the public buildings and more than sixty residences for teachers and officers. All residences are rented and the rent more than offsets the cost of the upkeep. Of course in so large a plant it is not practicable to confine the work to repairs, as additions and changes in buildings used for instruction are constantly necessary.

The college property contains 1,560 acres, with 21 miles of road, and probably five miles of concrete and dirt sidewalks. The upkeep of these is an item of no small cost and importance.

Item 4. Public Utilities—\$29,491.02:

While ideally situated so far as city distractions go, Clemson suffers the necessity of having to maintain its own public utilities, such as a heating and power plant, water works sewer system, telephone system, and the usual features for law enforcement common to a small village.

Item 5. Summer School—(\$1,500):

From small beginnings Clemson College is gradually building up an excellent summer school, placing stress upon the additional training of teachers. Last summer we had in attendance 234 students, this summer 478, and next summer the total will probably reach seven or eight hundred. The appropriation requested is for summer school teachers. No additional appropriation is necessary for equipment, as the regular college equipment and facilities are used for summer school work.

CONCLUSION

Operating on a most economical basis, the budget of the college work for 1923 represents, when efficiency is considered, an almost irreducible minimum, and at the same time a model of low cost for the education of one thousand students in technological lines—the most expensive form of education that can be given and the most important in an agricultural state. The college cannot be operated at its present scope without the appropriations requested. As faithful public servants charged with the responsibility of administering the state's largest college for men,—a college which represents vocationally 85 percent of our people,—the Trustees bring these facts to the attention of the Legislature. The state and the college entered into the original plan to erect and maintain the college on the fertilizer tax for the very purpose of giving Clemson an adequate support, independent of legislative appropriations. Neither the Legislature nor the Board could foresee the great expansion of the college or present financial condition. These conditions imperil the very purpose for which that bargain was made.

In this dilemma we must ask the Legislature to guarantee us a sufficient sum to operate on a normal basis, or we must reorganize the college on the basis of a smaller faculty and a smaller student body. With the demands of the times for trained men and the demands of the state for the education which Clemson is giving, such an alternative is unthinkable.

Already perhaps have we clung too long to an inadequate support which left nothing for buildings and for growth. Not many years ago Clemson was the envy of all the colleges in

the south because of its relative attendance and resources. Today I do not know of an agricultural and mechanical college in the South (with the exception of Auburn and the Georgia School of Technology), which have not practically doubled their financial resources. Meantime, for the want of money with which to build additional dormitories and provide accompanying facilities, our growth has been checked and during the last two years our very existence threatened. We have come to the end of our resources and our credit. There is nothing left to do but ask the appropriation necessary to supplement the fertilizer tax during these years of agricultural depression.

The responsibility rests with the Legislature, and I am sure that it will be met sympathetically and wisely by that honorable body with whom the President, Faculty and Trustees of Clemson College are but the partners in a great public enterprise.

Respectfully submitted,

W. M. RIGGS,
President Clemson College

Attached also are reports of the following officers—

P. S.—As required by law, I present herewith a list of students who pay tuition, those who do not, and those who hold scholarships.

1. The Treasurer.
2. The Auditor.
3. The Board of Visitors.
4. The Director of Experiment Station.
5. The Director of Extension Service.
6. The Secretary of the Fertilizer Board.
7. The Chief Chemist.
8. The State Entomologist and State Pathologist.
9. The State Veterinarian.
10. The report on Clemson College of Experts to the Legislature Committee on Economy and Consolidation.
11. An historical sketch of the founding of Clemson College.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.

Abbeville County

Pay Tuition—

Cann, Geo., Abbeville.
 Coleman, J. F., Abbeville.
 Graves, P., Abbeville.
 Hughes, W. T., Abbeville.
 Johnson, J. M., Abbeville.
 Moore, W. H., Abbeville.
 Rheams, T. J., Abbeville.
 Roche T. G., Abbeville.
 Sweetenburg, J. R., Abbeville.

Free Tuition—

Cheatham, J. C., Abbeville.
 Hagen, C. M., Due West.
 Hill, A. M., Abbeville.
 Thornton R. F., Abbeville.
 Wilson, J. W., 2nd, Abbeville.

Scholarship—

Crowther, C. C., Antreville.
 Tate, H. F., Abbeville.
 Williams, S. A., Abbeville.

Aiken County

Pay Tuition—

Burkmeyer, L. A., North Augusta.
 Eubanks, J. B., Aiken.
 Salley, H. D., Salley.
 Sawyer, G. W., Monetta.
 Woodward, T. E. P., Aiken.

Free Tuition—

Byrd, D. A., Granitville.
 Faust, O. L., Ketchings Mill.
 Howard, H. H., Graniteville.
 Reardin, J. L., Graniteville.
 Salley, N. L., Salley.
 Shealy, A. N., Perry.
 Tyler, W. P., Windsor.

Scholarship—

Cate, H. T., Monetta.
 Floyd, A. R., Augusta, Ga.

Allendale County

Pay Tuition—

Folk, J. L., Jr., Fairfax.
 Guess, J. P., Appleton.
 Youmans, L. W., Fairfax.

Free Tuition—

Keele, J. H., Allendale.
 Stoney, P. D., Allendale.
 Warren, G. W., Appleton.
 Warren, J. T., Appleton.

Scholarship—

Martin, B. R., Allendale.
 Youmans, M., Fairfax.

Anderson County

Pay Tuition—

Ashley, A. R., Honea Path.
 Beacham, J. E., Honea Path.

Clatworthy, W. M., Honea Path.

Dacus, J. A., Williamston.

Lean, F. R., Anderson.

Gambrell, F. L., Pendleton.

Griffin, J. K., Belton.

Hammond, W. S., Sandy Springs.

Hanks, S. H., Iva.

Herron, L. P., Starr.

Jackson, S. L., Starr.

Jones, J. F., Starr.

Jones, R. W., Starr.

Littlejohn, C. M., Belton.

Lyon, J. J., Anderson.

McClure, T. B., Anderson.

McCown, W. H., Anderson.

McLees, F. C., Anderson.

Pearman, S. N., Jr., Starr.

Pepper, J. O., Easley.

Petigrew, G. P., Starr.

Prevost, F. H., Anderson.

Pruitt, B. A., Anderson.

Pruitt, R. S., Anderson.

Shirley, W. J., Anderson.

Sloan, W. A., Anderson.

Smith, B. M., Starr.

Sullivan, A. A., Honea Path.

Tate, R. H., Anderson.

Thompson, J. T., Anderson.

Watson, P. J., Anderson.

Webb, J. H., Anderson.

Wilson, G. C., Honea Path.

Free Tuition—

Babb, Jack, Pelzer.

Bigby, L. S., Anderson.

Blythe, L., Pelzer.

Burriss, A., Anderson.

Crenshaw, J. C., Pelzer.

Davenport, O. F., Belton.

Day, E. S., Pendleton.

Duckworth, B. F., Jr., Anderson.

Dunlap, J. M., Anderson.

Erschine, J. H., Anderson.

Griffin, R. L., Anderson.

Hodge, B. H., Starr.

Hunter, J. V., Belton.

Lander, A. M., Pelzer.

McGee, J. A., Starr.

Patterson, S. N., Williamston.

Robinson, J. M., Anderson.

Russell, B. A., Autun.

Spear, G. M., Anderson.

Stewart, E. C., Pelzer.

Strickland, P. E., Belton.

Turner, G. E., Anderson.

Wigington, J. T., Anderson.

Wilhite, F. T., Anderson.

Wilson, C. W., Anderson.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS (Continued)

Scholarship—

Bagwell, J. C., Honea Path.
 Burriess, W. F., Anderson.
 Cannon, C. B., Honea Path.
 Gaines, J. G., Honea Path.
 Garvin, P. M., Pendleton.
 Smith, E. L., Anderson.
 Sullivan, J. M., Anderson.

Bamberg County

Pay Tuition—

Cox, J. P., Denmark.
 Price, G. E., Bamberg.
 Turnipseed, B. R., Bamberg.

Free Tuition—

Bamberg, G. P., Bamberg
 Hutto, D. F., Denmark.
 Price, L. C., Bamberg.
 Sojourner, J. H., Denmark.
 Zeigler, F. M., Denmark.
 Zeigler, R. L., Denmark.

Scholarship—

Hutto, W. D., Bamberg.
 Rowell, W. H., Bamberg.

Barnwell County

Pay Tuition—

Hair, A. B., Blackville.
 Hair, D. H., Blackville.
 Hall, E. H., Great Falls.
 Lemon, A. N., Barnwell.
 Owens, W. R., Denmark.
 Willis, M. A., Williston.

Free Tuition—

Armstrong, J. B., Barnwell.
 Dyches, L. B., Blackville.
 Ray, W. S., Blackville.

Beaufort County

Pay Tuition—

Bellamy, R. H., Beaufort.
 Marscher, A. A., Beaufort.
 Peeples, Andrew, Bluffton.
 Peeples, Philip, Bluffton.
 Peeples, T. S., Bluffton.
 Randall, H. W., Beaufort.
 Ricker, E. C., Beaufort.
 Ricker, G. F., Beaufort.
 Weatherston, J. C., Bluffton.

Free Tuition—

Mann, W. E. Beaufort.
 Sanders, E., Beaufort.

Berkeley County

Pay Tuition—

Sanders, J. S., Wandow.

Free Tuition—

Harvey, O. J., Summerville.
 Harvey, R. T., Pinopolis.

Rudloff, J. H., Pinopolis.

Scholarship—

Smith, J. E., Ridgeville.

Calhoun County

Pay Tuition—

Banks, R. W., St. Matthews.
 Jordan, W. E., St. Matthews.
 Keller, W. A., St. Matthews.
 Tabor, W. P., Fort Motte.

Free Tuition—

Cauthen, H. W., Fort Motte.
 Crook, A. L., Cameron.
 Hane, Whitfield, St. Matthews.
 Laird, A. S., St. Matthews.
 Rast, W. M., St. Matthews.
 Summers, D. K., Cameron.

Scholarship—

Herlong, E. S., St. Matthews.
 McGowan, W. D., Cameron.
 Stabler, F. W., North.

Charleston County

Pay Tuition—

Bee, S. S., Charleston.
 Blount, T. C., Charleston.
 Cappleman, G. J. S., Charleston.
 Dotterer, E. G., Charleston.
 Ferguson, J. L., Charleston.
 Frazier, P. M., Mt. Pleasant.
 Geraty, J. W., Youngs Island.
 Grice, G. D., Charleston.
 Harrison, J. M., Charleston.
 Livingston, D. F., Charleston.
 Martin, J. V., Charleston.
 Mikell, I. J., Edisto Island.
 Mikell, S. H., Edisto Island.
 Nimitz, A. E., Charleston.
 Prause, O. B., Charleston.
 Riley, A. J., Charleston.
 Rittenburg, A. A., Charleston.
 Rittenburg, M. R., Charleston.
 Royal, J. E., Mt. Pleasant.
 Sanders, B. K., Young's Island.
 Silcox, D. H., Mt. Pleasant.
 Stello, L. T., Charleston.
 Stevens, J. F., Youngs Island.
 Stevenson, C. A., Charleston.
 Welling, E. C., Charleston.
 Wieters, H. C., Charleston.
 Wieters, O. H., Charleston.

Free Tuition—

Bunch, R. L., Charleston.
 Davis, R., Martins Point.
 Denaro, J. M., Charleston.
 Jenkins, E. M., Edisto Island.
 Kirkley, C. L., McClellanville.
 Lowry, H. E., Charleston.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS (Continued)

McCants, L. A., Mt. Pleasant.

O'Neal, B., Charleston.

Reid, D. A. Charleston.

Seabrook, O. F., Charleston.

Seabrook, T. H., Charleston.

Venning, R. M., Mt. Pleasant.

Scholarship—

Bailey, E. M., Martins Point.

Linder, E. O., Adams Run.

Pinckney, A. G., Charleston.

Spearman, J. M., Charleston.

Townsend, J. C., Martins Point.

Whaley, E. C., Charleston.

Cherokee County

Pay Tuition—

Davidson, J. B., Gaffney.

Hall, R. E., Gaffney.

Hardin, R. L., Blacksburg.

Jeffries, T. L., Gaffney.

King, J. N., Gaffney.

McArthur, W. J., Gaffney.

Free Tuition—

Brown, J. J., Gaffney.

Inman, A. K., Wilkinsville.

Smith, T. D., Blacksburg.

Scholarship—

Mullins, D. H., Gaffney.

Tolleson, L. C., Gaffney.

Chester County

Pay Tuition—

Darby, J. E., Lowryville.

Ford, R. F., Richburg.

Hambright, W. A., Kings Creek.

Hardin, J. C., Chester.

Kilgore, J. D., Richburg.

Murr, B. L., Chester.

Reid, J. L., Chester.

Reid, W. J., Richburg.

Shannon, J. R., Blackstock.

Tibbs, R. H., Great Falls.

Wade, W. M., Lowryville.

White, J. A., Chester.

Free Tuition—

Bankhead, J. M., Lowryville.

Bell, S. L., Chester.

Bennett, H. J., Chester.

Gaston, J. P., Rodman.

Hollis, P. T., Richburg.

Reid, T. B., Clover.

Robbins, B. R., Chester.

Simpson, W. W., Richburg.

Stevenson, H. F., Richburg.

Wade, G. L., Chester.

Woodward, A. J., Chester.

Scholarship—

Ligon, G. T., Richburg.

Stevenson, D. W., Richburg.

Stevenson, R. A., Richburg.

Stevenson, T. C., Chester.

Chesterfield County

Pay Tuition—

Knight, T M., Cheraw.

Odom, W. H., Chesterfield.

Free Tuition—

Blakney, L. R., Pageland.

Knight, H. D., Angelus.

McArn, D. H., Cheraw.

Scholarship—

Thrower, J. H., Cheraw.

Clarendon County.

Pay Tuition—

Davis, L. A., Manning.

McIntosh, C. H., New Zion.

Free Tuition—

Bagnall, W. B., Manning.

Hodge, J. E., Manning.

Richburg, J. C., Sumerton.

Wilson, H. L., Manning.

Scholarship—

Harvin, J. L., Pinewood.

Plowden, E. D., Jordan.

Timmons, J. H., Manning.

Colleton County

Pay Tuition—

Boynton, C. W., White Hall.

Free Tuition—

Kinard, J. A., Ruffin.

Sanders, H M., Walterboro.

Smyly, J. W., Ruffin.

Thomas, J. H., Ruffin.

Willis, H. A., White Hall.

Scholarship—

Sanders, K. B., Walterboro.

Smith, R. H., Smoaks.

Dillon County

Pay Tuition—

Alford, E. L., Latta.

Elliott, J. F., Dillon.

Hargrove, F. W., Dillon.

McCormack, E. A., Dillon.

McCormack, J. H. Dillon.

Norton, J. C., Dillon.

Sherwood, R. Y., Dillon.

Free Tuition—

Hamilton, S. S., Dillon.

Hargrove, J. C., Dillon

LeGette, M. A., Latta.

Rogers, E. B, Dillon.

Scholarship—

Allen, A. C., Dillon.

Freeman, M. H., Latta.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS (Continued)

Herring, Foster, Homer.
McLeod, T. E., Bingham.
McLeod, N. A., Bingham.

Dorchester County

Pay Tuition—

Ackerman, T. H., St. George.
Henry, D. W., Jr., St George.
Utsey, C. H., Harleyville.

Free Tuition—

Allan, A. N., Summerville.

Edgefield County

Pay Tuition—

Folk, J. R., Edgefield.
Madden, E. C., Edgefield.
Thurmond, J. S., Edgefield.

Free Tuition—

Talbert, E. H., Edgefield.

Fairfield County

Pay Tuition—

Blair, J. W., Blair.
Jones, M. L., Longtown.
McMeekin, F. R., Monticello.
McMeekin, S. C., Jenkinsville.
Robinson, C. A., Jr., Winnsboro.

Free Tuition—

Cathcart, A. B., Winnsboro.
Chappels, I. W., Jenkinsville.
Glenn, H. Y., Wallaceville.
Hardin, W. R., Winnsboro.
Jennings, F. C., Winnsboro.
Tennant, A. B., Winnsboro.

Scholarship—

Chappels, E. D., Jenkinsville.
Harvey, S. A., Woodward.

Florence County

Pay Tuition—

Benton, L. L., Timmons ville.
Evans, M. A., Pamplico.
Huggins, Marion, Timmons ville.
Mathews, S. C., Scranton.

Free Tuition—

Edwards, T. H., Jr., Mars Bluff.
Finklea, G. I., Florence.
Hawkins, G. E., Timmons ville.
Hinson, H. L., Scranton.
Jeffords, G. P., Timmons ville.
Johnston, R. H., Florence.
Moore, P. W., Florence.
Whitton, J. E., Florence.

Scholarship—

Hinson, I. L., Scranton.
Kennedy, F. L., Pamplico.
Shands, R. G., Ebenezer.

Georgetown County

Pay Tuition—

Camlin, G. H., Andrews.
Jones, D. B., Georgetown.
Rosa, J. R., Georgetown.

Scholarship—

Diley, Z. M., Andrews.
Doar, L. H., Georgetown.

Greenwood County

Pay Tuition—

Cothran, G. T., Greenwood.
Graham, R. N., Hodges.
Henderson, T. P., Greenwood.
Jackson, M. E., Greenwood.
Mounce, J. L., Greenwood.
Rasor, A. B., Donalds.
Rodgers, H. W., Callison.
Rodgers, S. A., Callison.
Seago, J. A., Greenwood.
Snead, C. B., Greenwood.
Warner, M. R., Greenwood.

Free Tuition—

Bell, R. F., Callison.
Cothran, F. H., Greenwood.
Garrett, W. F., Greenwood.
Knight, O. J., Ware Shoals.
Marshall, J. W., Greenwood.
Martin, B. F., Ninety Six.
Warner, J. D., Greenwood.

Scholarship—

Brissie, M. B., Hodges.
Martin, F. G., Ninety Six.
Roberts, W. J., Ninety Six.
Shirley, L. R., Greenwood.
Vines, J. R., Greenwood.
Woodle, H. A., Greenwood.
Young, C. T., Greenwood.

Greenville County

Pay Tuition—

Allen, C. S., Greenville.
Anderson, A. J., Greenville.
Ballinger, W. M., Greer.
Ballentine, W. L., Greenville.
Batson, J. P., Greenville.
Bryan, Geo. T., Greenville.
Cothran, A. H., Toney Creek.
Croskeys, H. G., Piedmont.
Cunningham, J. L., Greer.
Davis, E. P., Greenville.
Fayssoux, F. S., Greenville.
Fleming, H. G., Greenville.
Gillfillin, J. M., Greenville.
Jacobi, L. W., Greenville.
LaBoone, F. D., Taylors.
Leach, M. R., Greenville.
Marler, J. A., Fountain Inn.
Marshall, D. H., Greenville.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS (Continued)

Morgan, B. A., Greenville.
McKinney, R. B., Simpsonville.
Norris, J. A., Piedmont.
Reese, M. K., Greer.
Williams, W. B., Greenville.
Woodside, H. R., Greenville.

Free Tuition—

Armstrong, H., Fountain Inn.
Baumann, J. H., Greenville.
Berry, J. B., Greenville.
Bobo, L., Greenville.
Freeman, J. L., Greenville.
Givins, J. W., Fountain Inn.
Halohan, R. F., Marietta.
Halohan, V. J., Marietta.
Hellams, J. I., Travelers Rest.
Henderson, H. J., Greenville.
Hopkins, J. B., Greenville.
Howie, J. L., Greenville.
Jones, J. W., Greenville.
Jordon, S. B., Greenville.
Mackey, J. R., Piedmont.
Moore, C. M., Simpsonville.
Pope, Thos. H. Jr., Greenville.
Robertson, T. B., Greenville.
Shanklin, J. A., Greer.
Smith, C. E., Greenville.
Stewart, J. T., Simpsonville.
Taylor, F. W., Fountain Inn.
Woodside, H. F., Greenville.

Scholarship—

Miller, C. L., Greenville.
McCrary, M. L., Greenville.

Horry County

Pay Tuition—

Derham, E. M., Green Sea.
Fowler, F. J., Loris.
King, C. B., Myrtle Beach.
Long, C. B., Conway.
Williams, L. P., Conway.
Williamson, J. G., Tabor.

Free Tuition—

Altman, H. S., Gallivants Ferry.
Lewis, J. G., Aynor.
Smith, S. T., Conway.

Scholarship—

Causey, L. G., Tabor.
Dorman, J. K., Conway.
Harrellson, E. A., Nichols.

Hampton County

Pay Tuition—

Causey, M. O., Furman.
Gooding, P. H., Crockettville.
Maner, J. K., Garnett.
Mason, J. E., Scotia.
Molair, W. L., Furman.

Free Tuition—

Carter, R. E., Varnsville.
Godbold, Asa, Estill.
Lang, G. B., Garnett.
Lightsey, L. M., Hampton.
Mason, W. A., Estill.
Miley, L., Brunson.
Mixon, A. B., Furman.
Thomas, F. E., Hampton.
Wiggins, E. C., Garnett.
Wiggins, J. E., Garnett.

Scholarship—

Burriss, H. A., Hampton.

Jasper County

Scholarship—

Fripp, W. T., Tillman.
Parnell, H. N., Gillisonville.

Kershaw County

Pay Tuition—

Jones, E. L., Liberty Hill.
Lenoir, T. W., Rembert.
Porter, H. S., Camden.
Truesdale, J. P., Kershaw.

Free Tuition—

Cook, W. C., Lancaster.
Nettles, H. E., Lugoff.
Tiller, H. C., Bethune.

Scholarship—

Clark, T. H., Camden.
Goodale, Edwin, Camden.
Richards, J. P., Liberty Hill.

Lancaster County

Pay Tuition—

Bailes, J. P., Fort Mill.
Bailes, W. B., Fort Mill.
Crenshaw, L. C., VanWyck.
Culp, T. F., Lancaster.
Williams, E. B., Kershaw.

Free Tuition—

Blakney, L. B., Lancaster.
Glenn, J. R., Waxhaw.
Timmons, E. D., Heath Spring.
Timmons, L. C., Heath Spring.

Scholarship—

Harris, O. P., Fort Mill.
Outen, D. L., Kershaw.

Laurens County

Pay Tuition—

Carter, D. E., Clinton.
Cheek, W. L., Ware Shoals.
Clapp, W. J., Clinton.
Copeland, E. W., Laurens.
Dunlap, J. H., Laurens.
Easterby, A. H., Laurens.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS (Continued)

Fuller, E. P., Laurens.
Gray, R. E., Gray Court.
Griffin, W. F., Cross Hill.
Hunter, H. A., Clinton.
Wood, H. H., Princeton.

Free Tuition—

Albright, G. C., Laurens.
Crisp, C. A., Laurens.
Culbertson, J. A., Ware Shoals.
Davis, T. W., Clinton.
Knight, A. J., Ware Shoals.
Templeton, J. B., Clinton.
Wallace, N. L., Ora.
Wallace, T. P., Ora.

Scholarship—

Holmes, J. S., Mountville.
Wofford, G. C., Laurens.

Lee County

Pay Tuition—

Bateman, E. D., St. Charles.
McLendon, J. R., Bishopville.

Lexington County

Pay Tuition—

Rutland, H. M., Batesburg.
Smith, D. P., Leesville.

Free Tuition—

Fink, B. L., Batesburg.
Hartley, R. L., Batesburg.
Hiller, R. E., Chapin.
Koone, H. E., Peaks.
Manus, W. B., New Brookland.

Marion County

Pay Tuition—

Craven, W. H., Gresham.
Mace, J. C., Marion.
Mace, K. M., Courtenay.
Rogers, J. F., Mullins.

Free Tuition—

Cartwright, A. K., Marion.
Driegers, B. F., Sellars.
Evans, F. A., Marion.
Gasque, A. M., Marion.
Hood, H. W., Mullins.
Jones, Chas. O., Mullins.
McMillan, R. W., Courtenay.
Owens, J. B., Marion.

Scholarship—

Jones, G. L., Mullins.

Marlboro County

Pay Tuition—

Crossland, J. W., Bennettsville.
Fletcher, F. G., McColl.
Fletcher, H. W., McColl.
McLaurin, E. B., McColl.
Sherrill, L. H., Bennettsville.
Smith, A. L., Bennettsville.

Smith, O. L., Bennettsville.
Smith, D. R., Clio.
Welch, W. F., Clio.
Wright, J. D., Clio.
Wright, L. C., Clio.

Free Tuition—

Crossland, T. M., Bennettsville.
Dudley, J. E., Bennettsville.
Fletcher, L. A., Bennettsville.
Owens, J. M., Gibson, N. C.

Scholarship—

Howell, L. M., Bennettsville.
Lee, W. L., Clio.
Smith, M. M., Clio.

McCormick County

Pay Tuition—

Boyd, S. A., McCormick.
Britt, W. E., McCormick.
Brown, N. G., McCormick.
Bussey, J. C., Parksville.
Covin, W. F., Willington.
Dorn, J. B., McCormick.
Robertson, J. M., Plum Branch.
Tolbert, J. B., McCormick.

Scholarship—

Sheppard, J. L., McCormick.

Newberry County

Pay Tuition—

Boozer, A., Prosperity.
Coleman, D., Chappells.
Coleman, J. V., Silverstreet.
Epting, C. V., Peaks.
Hipp, Richard, Pomaria.
Huffman, W. C., Little Mountain.
Johnstone, W. P., Newberry.
Leavell, R. H., Newberry.
Leavell, J. L., Newberry.
Parrish, M. E., Newberry.
Sanders, J. L., Silverstreet.
Singley, H. S., Prosperity.
Smith, W. B., Kinards.
Stewart, W. M., Newberry.
Werts, R. B., Newberry.
Wilbur, W. W., Newberry.

Free Tuition—

Boozer, W. M., Newberry.
Counts, O. L., Pomaria.
Epting, C. A., Little Mountain.
Epting, J. C., Little Mountain.
Hardeman, H. W., Newberry.
Miller, J. H., Little Mountain.
Pugh, P. W., Prosperity.
Sease, E. C., Prosperity.
Sease, P. E., Prosperity.
Sease, T. M., Prosperity.
Sealy, N. P., Prosperity.
Spearman, J. H., Newberry.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS (Continued)

Spearman, W. M., Newberry.
Wallace, F. H., Kinards.
Wheeler, W. C., Little Mountain.
Wise, G. C., Prosperity.

Scholarship—

Aull, J. C., Pomaria.
Goree, I. M., Newberry.
Hunter, J. H., Prosperity.
Kibler, J. W., Pomaria.
Long, L. S., Prosperity.
Smith, D. E., Kinards.

Uconce County

Pay Tuition—

Alexander, J. H., Walhalla.
Anderson, W. T., Seneca.
Carey, F. L., Seneca.
Davis, C. R., Westminster.
Ellison, C. H., Seneca.
Gillespie, B. B., Seneca.
Goode, C. W., Clemson College.
Heller, J. R., Seneca.
Holmes, A. G., Clemson College.
Martin, M. V., Seneca.
Martin, R. S., Clemson College.
Martin, S. M., Clemson College.
Mills, W. H., Clemson College.
McCarley, C. B., Seneca.
McHugh, J. B., Clemson College.
McMahan, J., Richland.
Norton, J. J., Seneca.
Moss, J. H., Walhalla.
Price, J. H., Townville.
Robertson, B. F., Clemson College.
Schilleter, J. C., Clemson College.
Seaborn, Geo., Walhalla.
Stribling, D. W., Richland.
Stribling, W. J., Walhalla.
Todd, J. N., Walhalla.
Verner, J. V., Richland.
Wertz, J. B., Clemson College.
Wooten, W. H., Fair Play.

Free Tuition—

Carter, R. W., Westminster.
Coarsey, R. W., Clemson College.
Cox, S. M., Seneca.
Dorn, W. L., Westminster.
Gambrell, R. M., Westminster.
Hewer, J. C., Clemson College.
Hunter, S. C., Westminster.
Martin, L. I., Westminster.
Mathews, V. L., Clemson College.
Melton, L. H., Clemson College.
Merck, W. L., Clemson College.
McPhail, W. H., Townville.
Shiver, N. C., Clemson College.
Shockley, J. A., West Union.
Spencer, B., Madison.

Stribling, R. S., Seneca.
Willis, W. T., Westminster.

Scholarship—

Middleton, W. S., Clemson College.
Morris, J. A., Newry.
McPhail, M., Townville.
Shiver, J. C., Clemson College.

Orangeburg County

Pay Tuition—

Bennett, N. C., Holly Hill.
Culler, C. W., Orangeburg.
Dukes, W. A., Branchville.
Dukes, J. H., Orangeburg.
Dukes, O. L., Orangeburg.
Herbert, D. O., Orangeburg.
Kirk, R. S., Eutawville.
Knott, W. T., North.
Mackay, M. S., Orangeburg.
Miley, J. N., Branchville.
O'Cain, H. F., Orangeburg.
Simmons, K. B., Rowesville.
Simmons, T. D., Rowesville.
Till, N. R., Orangeburg.
Tindall, L. N., Vance.
Weeks, J. L., Orangeburg.
Wilson, H. F., Bowman.

Free Tuition—

Ayers, D. C., Orangeburg.
Gibson, J. W., Orangeburg.
Koopman, J. J., Eutawville.
Mosely, J. W., Orangeburg.
Robinson, E. E., Rowesville.
Salley, H. B., Salley.
Savage, E. B., Eutawville.
Sinclertary, G. K., Holly Hill.
Smith, T. S., Springfield.
Thomson, E. A., Reevesville.
Till, E. C., Orangeburg.
Traxler, W. C., Bowman.
Traxler, D. W., Bowman.
Vincent, C. E., Orangeburg.
Zeidler, H. J., Orangeburg.

Scholarship—

Hart, T. J., Vance.
Thomas, H. L., Mayesville.
Traxler, H. C., Bowman.

Pickens County

Pay Tuition—

Allgood, L. L., Central.
Cartee, Eugene, Liberty.
Caines, H. I., Central.
Gaines, T., Central.
Hendricks, L. A., Easley.
Jones, B. K., Easley.
Kay, A. E., Easley.
Mathews, D. T., Pickens.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS (Continued)

Robinson, L. H., Pickens.
Rowland, J. R., Central.
Smith, T. W., Pickens.
Sutherland, J. L., Pickens.
Walker, H. P., Pickens.
Williams, N., Pickens.

Free Tuition—

Cobb, C. N., Easley.
Ellison M. C., Easley.
Hunter, J. M., Liberty.
Meredith, P. M., Pickens.
Murphy, T. J., Piedmont.
Roark, D., Pickens.
Roark, R. B., Pickens.
Smith, C. R., Easley.

Scholarship—

Arnold, L. W., Central.

Richland County

Pay Tuition—

Asbill, C. M., Columbia.
Bates, H. G., Eastover.
Cobb, W. H., Columbia.
Coleman, E. B., Eastover.
Coleman, R. L., Columbia.
Darby, J. P., Columbia.
Jones, H. J., Congaree.
Sams, J. H., Columbia.
Webb, H. B., Columbia.

Free Tuition—

Bauer, J. W., Columbia.
Brown, Brooks, Blythewood.
Cannon, E. A., Blythewood.
Dominick, H. B., Columbia.
Eleazer, L. H., Chapin.
Guy, B. B., Columbia.
Harmon, S. E., Columbia.
Hollowell, J. G., Columbia.
Hollowell, J. R., Columbia.
Killian, J. M., Columbia.
Lowman, W. R., White Rock.
Lucius, T. L., Eastover.
Madden, L. E., Columbia.
Maxwell, R. E., Columbia.
Meehan, J. L., Columbia.
Price, G. D., Eastover.
Shelamer, A. M., Columbia.
Schoolbred, A., Eastover.
Smith, C. H., Columbia.

Scholarship—

Daniel, H. R., Congaree.
Hoffman, M. B., Blythewood.

Saluda County

Pay Tuition—

Coleman, H. V., Silverstreet.
Coleman, J. M., Silverstreet.
Wise, P. N., Batesburg.

Free Tuition—

Goff, W. E., Leesville.
Merchant, V. E., Chappels.
Quattlebaum, C. A., Ridge Springs.
Waters, P. B., Saluda.

Sumter County

Pay Tuition—

Chandler, J. W., Sumter.
Emanuel, E. H., Bouden.
Friar, E. M., Sumter.
Robinson, A. C., Oswego.
Sanders, C. W., Jr., Hagood.
Sanders, D. M., Hagood.

Free Tuition—

Bass, F. J., Mayesville.
Bradley, N. M., Sumter.
Buck, F. E., Sumter.
Haynesworth, J. R., Sumter.
Mellette, W. W., Sumter.
McGrew, C. J., Wedgefield.
Ryan, F. R., Wedgefield.
Ryan, M. S., Wedgefield.
Thompson, W. J., Rembert.
Wells, W. R., Sumter.

Scholarship—

Haynesworth, C. R., Sumter.

Spartanburg County

Pay Tuition—

Cox, G. W., Greer.
Dean, G. B., Spartanburg.
Fitzgerald, A. B., Spartanburg.
Foster, H. M., Roebuck.
Fuller, R. C., Pacolet.
Gray, W. H., Woodruff.
Hallstead, R. T., Spartanburg.
Johnson, H. L., Spartanburg.
Johnson, B. O., Spartanburg.
Kirkpatrick, J. W., Pacolet.
Lambright, F. L., Landrum.
Lanford, C. E., Spartanburg.
Patterson, J. T., Woodruff.
Pearson, A. S., Woodruff.
Porter, L. W., Jr., Spartanburg.
Sams, M. W., Spartanburg.
Taylor, T. J., Spartanburg.
Thorne, T. F., Landrum.
Turbyfill, W. G., Spartanburg.
Walker, C. F., Spartanburg.

Free Tuition—

Bonner, T. A., Trough.
Cannon, W. S., Spartanburg.
Clement, B. L., Spartanburg.
Freeman, E. J., Spartanburg.
Freeman, R. A., Spartanburg.
Gentry, L. M., Landrum.
Hendricks, T. G., Duncan.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS (Continued)

- Johnson, W. P., Inman.
 Lee, R. L., Landrum.
 McClimon, M. L., Spartanburg.
 Shands, E. H., Campobello.
 Trimmier, L. G., Spartanburg.
 Vaughan, T. L., Cowpens.
 Watkins, E. F., Spartanburg.
 West, Walter, Spartanburg.
- Scholarship—
 Alley, H. W., Spartanburg.
 Ezell, B. D., Cherokee.
 Morgan, T. W., Welford.
 Phifer, G. E., Spartanburg.
- Union County**
 Pay Tuition—
 Betsill, J. L., Union.
 Burton, C. C., Union.
 Calvert, B. A., Jonesville.
 Calvert, J. P., Jonesville.
 Haas, W. V., Union.
 Haas, H. P., Union.
 Jefferies, E. E., Union.
 Kirby, C. E., Union.
 Littlejohn, B. C., Jonesville.
 Smith, W. R., Union.
- Free Tuition—
 Chambers, J. A., Union.
 Hollingsworth, P. H., Union.
 Howell, R. E., Buffalo.
 Humphries, C. G., Union.
 Rice, S. C., Union.
 Sartor, C. C., Union.
 Williams, E. W., Jonesville.
- Scholarship—
 Chaney, L. J., Sedalia.
 Clark, D. C., Union.
 Douglas, W. J., Jonesville.
 Hopkins, A. P., Buffalo.
- Williamsburg County**
 Pay Tuition—
 Coleman, D. N., Cades.
 Davis, J. E., Salters.
 Gambrell, J. O., Heinemann.
 O'Bryan, M. B., Heinemann.
 Oliver, M. B., Greelyville.
- Register, F. B., Greelyville.
 Rhems, C. F., Rhems.
- Free Tuition—
 Boyles, B. A., Greelyville.
 McCullough, T. G., Kingstree.
 Steel, H., Kingstree.
- Scholarship—
 Daniels, D. M., Cooper.
 Kirton, M. B., Cades.
- York County**
 Pay Tuition—
 Farris, C. D., Rock Hill.
 Farris, T. M., Fort Mill.
 Fudge, B. R., Rock Hill.
 Garrison, C. C., Fort Mill.
 Hood, J. M., Sharon.
 Kinard, J. P., Rock Hill.
 Kinard, O. W., Rock Hill.
 Logan, F. R., York.
 Quinn, J. W., York.
 Stewart, J. M., Rock Hill.
 Wray, A. F., York.
- Free Tuition—
 Blankenship, W. F., Fort Mill.
 Erwin, R. M., Fort Mill.
 Miller, J. R., York.
 Mills, L. F., Fort Mill.
 Nichols, J. L., Rock Hill.
 Percival, S. M., Rock Hill.
 Plexico, P. G., Rock Hill.
 Poag, C. W., Rock Hill.
 Poag, L. R., Rock Hill.
 Roddey, J. D., Rock Hill.
 Sharpe, J. M., Rock Hill.
 Smith, J. P., York.
 Wylie, Clifford, Rock Hill.
 Young, L. R., Rock Hill.
 Youngblood, J. M., Rock Hill.
- Scholarship—
 Barron, W. H., York.
 Cook, J. M., York.
 Glenn, H. S., York.
 Gordon, Wm. C., Rock Hill.
 Grier, W. H., Fort Mill.
 Horton, L. F., Sharon.
 Robinson, H. E., Sharon.

Non-Resident Students

Allen, R. E., Chattanooga, Tenn.
Anderson, E. K., Auburndale, Fla.
Bogard, W. P., Russellville, Ark.
Booker, L. R., Charlotte, N. C.
Brimley, R. E., Raleigh, N. C.
Cannon, N. S., Hendersonville,
N. C.
Clyatt, O. V., Fort Meade, Fla.
Colbert, F. H., Ardmore, Okla.
Colbert, W. C., Ardmore, Okla.
Coleman, P. W., Anniston, Ala.
Davenport, H. L., Horseshoe, N. C.
Dicks, R. L., Lakeland, Fla.
Dunham, F. E., Stewart, Fla.
Ellzey, T. A. M., Clio, Ga.
Floyd, T. H., LaGrange, Ga.
Freeland, B. W., Crawley, La.
Gilbert, W. W., Charlotte, N. C.
Graham, G. B., Charlotte, N. C.
Harding, T. L., Yadkinsville, N. C.
Johnson, C. S., Jacksonville, Fla.
Kehew, C. L., Arlington, Mass.
Kent, Geo. L., Bloomfield, N. J.
Lehman, E. R., LaGrange, Ga.
Longley, J. M., LaGrange, Ga.
Lucas, T. T., Charlotte, N. C.
Mann, W. T., Stevenson, Ala.
Melson, H. R., Hogansville, Ga.
Muthaiah, A. D., India
Parker, E. C., Grover, N. C.
Redfern W. M., Wadesboro, N. C.
Robbins, J. R., Marion, Ala.
Roberts, O. A., Walters, Okla.
Sanford, R. L., Athens, Ga.
Sanftleben, D. A., Jamica, B. W. I.
Sligh, W. D., Norfolk, Va.
Smith, F. V., Charlotte, N. C.
Smythe, E. A., Hendersonville, N. C.
Springs, J. A., Hickory, N. C.
Stokun, M. G., New York, N. Y.
Tate, H. F., Union Mills, N. C.
Taylor, F. E., Macon, Ga.
Taylor, T., Savannah, Ga.
Vogel, T. R., Washington, D. C.
Williams, J. S., Washington, D. C.
Willis, C. E., LaGrange, Ga.
Wilson, J. W., 1st., Vila Rica, Ga.
Wood, T. C., Washington, D. C.
Woodward, W., Augusta, Ga.
Youmans, T. R., Dawson, Ga.

Report of the Treasurer

Clemson College, S. C., July 1, 1922

To The Finance Committee of the Board of Trustees. (Through the President).

Gentlemen:—

I have the honor of transmitting herewith my Annual Report of the Receipts and Disbursements of The Clemson Agricultural and Mechanical College of South Carolina for the fiscal year ending June 30, 1922.

Respectfully submitted,

S. W. Evans,

Secretary-Treasurer.

RESOURCES

DR.

Income—

| | | |
|--|--------------|------------|
| 1. Privilege Fertilizer Inspection Tax | \$126,118.07 | |
| 2. Morrill and Nelson Fund (U. S.) | 25,000.00 | |
| 3. Interest on Landscrip | 5,754.00 | |
| 4. Interest on Clemson Bequest | 3,512.36 | |
| 5. Tuition from Students | 15,601.94 | |
| 6. Rents | 9,714.27 | |
| 7. Matriculation and Laboratory Fees | 4,892.83 | |
| 8. Interest and Miscellaneous Receipts | 13,600.87—\$ | 204,194.34 |

From Other Sources—

| | | |
|--------------------|--------------|---------------|
| State Loan | \$112,842.11 | |
| Reserve Fund | 77,209.35—\$ | 190,051.46 |
| Total | | \$ 394,245.80 |

EXPENDITURES

CR.

| | | |
|--|--------------|-----------|
| Scholarships and Advertisements | \$ 14,461.98 | |
| Fertilizer Inspection and Analysis | 22,929.29—\$ | 37,391.27 |

College Operating Expenses—

| | | |
|--|--------------|---------------|
| Salaries | \$154,809.18 | |
| Coal, Labor, etc. | 92,580.65—\$ | 247,389.83 |
| Equipment for Teaching | \$ 13,104.36 | |
| Permanent Additions and Improvements | 24,857.47—\$ | 37,961.83 |
| Total | | \$ 322,742.93 |
| Reserve on hand June 30, 1922, necessary to carry college during season of small Fertilizer sales, July 1 to January 1. | | \$ 71,502.87 |
| Total | | \$ 394,245.80 |

The following is a more detailed statement, showing the Expenditures and cost of the Public State Work, and each Department and Division of the College, under the items appropriated by the Board of Trustees:

PUBLIC STATE WORK DEPARTMENT**Scholarships and Advertisements—**

| | | |
|---------------------------------------|-----------------|-----------|
| Scholarships and Advertisements | \$ 14,461.98—\$ | 14,461.98 |
|---------------------------------------|-----------------|-----------|

Fertilizer Inspection and Analysis—

| | | |
|---|-----------|-----------|
| Salaries | 8,549.80 | |
| Apparatus | 176.93 | |
| Chemicals | 51.23 | |
| Gasoline | 253.28 | |
| Recordbooks, Postage, Stationery, etc. | 134.95 | |
| Incidentals | 41.85 | |
| Labor—Janitor | 300.00 | |
| Extra Help in Laboratory and Office | 420.00 | |
| Emergency Supplies, Labor, etc. | 259.12 | |
| Traveling Expenses | 111.16 | |
| Salaries | 3,999.96 | |
| Labor—Janitor | 600.00 | |
| Tags and Printing | 2,451.00 | |
| Pay and Travel of 13 Inspectors | 4,789.92 | |
| Freight, Postage and Incidentals | 292.99 | |
| Legal Services | 187.50 | |
| Condensed Fertilizer Bulletin | 309.60—\$ | 22,929.29 |

| | | |
|--------------------------------------|----|-----------|
| Public State Work Expenditures | \$ | 37,391.27 |
|--------------------------------------|----|-----------|

COLLEGE WORK

ACADEMIC DEPARTMENT

English Division—

| | | |
|---------------------------------------|----------|-------|
| Repairs to Class Room Furniture | \$.90 | |
| Stationery, etc. | 13.10—\$ | 14.00 |

History Division—

| | | |
|---------------------------------|-------------|-------|
| Periodicals for Class Use | \$ 10.80—\$ | 10.80 |
|---------------------------------|-------------|-------|

Mathematics Division—

| | | |
|--|-------------|-------|
| Repairs to Furniture and Equipment ... | \$ 18.55—\$ | 18.55 |
|--|-------------|-------|

Office and Unclassified Division—

| | | |
|--|-----------|--------|
| Janitor | \$ 390.00 | |
| Chalk, Erasers, Brooms, Stationery, etc. | 145.93—\$ | 535.93 |

Physics Division—

| | | |
|---|-----------|--------|
| Laboratory Supplies and Repairs | \$ 149.51 | |
| Apparatus for Mechanics and Heat | 144.94 | |
| Apparatus for Elec. and Magnetism | 156.64 | |
| Radiator for Basement | 22.31—\$ | 473.40 |

Salaries—

| | | |
|------------------------------------|-----------------|-----------|
| Salaries—Professors and Assistants | \$ 33,986.82—\$ | 33,986.82 |
|------------------------------------|-----------------|-----------|

| | | |
|-------------------------------|----|-----------|
| Department Expenditures | \$ | 35,039.50 |
|-------------------------------|----|-----------|

AGRICULTURAL DEPARTMENT

Agricultural Education Division—

| | | |
|----------------------------------|-----------|--------|
| Transportation of Students | \$ 134.07 | |
| Printing School Leaflets | 188.80 | |
| Lantern Slides and Plates | 68.00 | |
| Office Furniture | 252.22 | |
| Laboratory Equipment | 166.16—\$ | 809.25 |

Agronomy Division—

| | | |
|---|-----------|----------|
| Cement, Gasoline, Oil, etc. | \$ 184.33 | |
| Seed Score Cards, etc. | 69.72 | |
| Repairs and Parts for Machinery | 29.86 | |
| Materials for Class Use | 88.99 | |
| Cement, Gasoline, Oil, etc. | 100.00 | |
| Laboratory Equipment | 197.52 | |
| Office Equipment | 46.51 | |
| Machinery for Farm Laboratory | 795.07 | |
| Balances, etc., for Soil Laboratory | 333.86 | |
| Small Apparatus for Soil Laboratory | 277.94 | |
| Closets and Sinks | 65.77 | |
| Three Skylights | 75.00—\$ | 2,264.57 |

Animal Husbandry Division—

| | | | |
|--|----|-----------|----------|
| 1-3 Salary Herdsman | \$ | 416.65 | |
| Labor | | 475.35 | |
| Repair to Fences | | 198.30 | |
| Expenses of Instructors to Judging Contests | | 29.67 | |
| Feed for Live Stock Used for Teaching | | 2,663.73 | |
| Live Stock Requisition Books | | 249.49 | |
| Miscellaneous Equipment | | 290.73 | |
| Labor for New Fencing | | 700.20 | |
| Pasture Improvements | | 500.03 | |
| Machine Shed | | 279.88—\$ | 5,804.03 |

Botany and Bacteriology Division—

| | | | |
|---|----|-----------|----------|
| Botanical Publications | \$ | 89.68 | |
| Glassware and Laboratory Supplies | | 483.40 | |
| Collecting Materials | | 185.60 | |
| Repairs and Replacements | | 62.36 | |
| Chart (Mimeograph) | | 177.01 | |
| Hydrogen Detector | | 250.00 | |
| Physiological Apparatus | | 195.24—\$ | 1,443.29 |

Dairy Division—

| | | | |
|---|----|---------|----------|
| 1-2 Salary Creamery Foreman | \$ | 719.75 | |
| 1-3 Salary Dairy Herd Foreman | | 14.98 | |
| Labor—Dairy Herd for Teaching | | 450.07 | |
| Feed for Dairy Cattle used for Teaching | | 499.51 | |
| Freight and Repairs | | 59.31 | |
| Glassware and Chemicals | | 124.91 | |
| Operating and Upkeep Expenses | | 142.56 | |
| Upkeep of Fences | | 198.99 | |
| Repairs to Refrigerating Plant | | 99.14 | |
| Cork Floor—Dairy Building | | 50.00 | |
| Small Laboratory Equipment | | 75.96 | |
| Hand Butter Filler | | 17.00 | |
| Moisture Test Scales | | 31.50 | |
| Cheese Making Equipment | | 161.80 | |
| Additional Calf Barn Equipment | | 170.30 | |
| Clipping Machine | | 90.55 | |
| Gurnsey Bull | | 500.00 | |
| Cement Manger—West wing | | 197.80 | |
| Four Temporary Bull Pens | | 298.29 | |
| Cement Walk—Calf Barn | | 84.54 | |
| Doors in Barn | | 47.00 | |
| New Door for Three Sides | | 36.32 | |
| Litter Truck—Calf Barn | | 96.48 | |
| Completion Cooling Room | | 23.57 | |
| Removing Two Partitions | | 38.80 | |
| Extra Equipment for Fed. Board Work | | 8.82—\$ | 4,237.95 |

Entomology and Zoology Division—

| | | |
|--------------------------------------|-----------|--------|
| Class and Laboratory Materials | \$ 123.00 | |
| Labor | 33.43 | |
| Repairs to Instruments | 75.80 | |
| Spraying and Dusting Apparatus | 145.32 | |
| Microscope for Laboratory | 150.00—\$ | 527.55 |

Geology and Mineralogy Division—

| | | |
|----------------------|----------|--------|
| Supplies, etc. | \$ 49.97 | |
| Labor | 29.00 | |
| Lantern Slides | 30.00—\$ | 108.97 |

Horticulture Division—

| | | |
|---------------------------------------|-----------|----------|
| 1-2 Salary Greenhouse Foreman | \$ 605.00 | |
| 1-2 Salary Hort. Foreman | 500.00 | |
| Labor | 884.94 | |
| Fertilizer | 100.00 | |
| Seed, Plants, etc. | 198.82 | |
| Greenhouse Supplies and Repairs | 97.69 | |
| Coal for Greenhouse | 94.25 | |
| Spray Apparatus and Materials | 100.00 | |
| Feed for Two Mules | 249.42 | |
| Tools for Class Use | 31.42 | |
| Rubber Hose | 21.80 | |
| Filing Cards and Cabinet | 99.72—\$ | 2,983.06 |

Office and Unclassified Division—

| | | |
|--|-------------|----------|
| Janitors for Agri'l Hall and Dairy and Supplies | \$ 1,047.05 | |
| Gasoline | 201.97 | |
| Attendance on Conventions, etc. | 100.00 | |
| Stationery, Postage, etc for Department | 514.38 | |
| Upkeep of Building | 128.31 | |
| Mimeograph Stand | 22.50 | |
| Shades | 60.00—\$ | 2,074.21 |

Veterinary Science Division—

| | | |
|--|-----------|--------|
| Janitor and Extra Labor | \$ 522.06 | |
| Veterinary Journals | 4.00 | |
| Repairs to Gates, Fences, etc. | 74.70 | |
| Stoves for Office and Class Rooms..... | 56.84 | |
| Desk | 67.50—\$ | 725.04 |

Salaries—

| | | |
|--|-----------------|-----------|
| Salaries—Professors and Assistants | \$ 33,453.72—\$ | 33,453.72 |
|--|-----------------|-----------|

| | | |
|-------------------------------|----|-----------|
| Department Expenditures | \$ | 54,431.64 |
|-------------------------------|----|-----------|

CHEMICAL DEPARTMENT**Chemistry Division —**

| | | | |
|-----------------------------------|-----------|--------|----------|
| Chemical Apparatus | \$ | 500.00 | |
| Chemicals and Supplies | | 500.00 | |
| Gasoline | | 255.04 | |
| Books, Journals and Binding | | 199.38 | |
| Repairs to Apparatus | | 190.90 | |
| Incidentals | | 148.85 | |
| Labor—Janitor | | 300.00 | |
| Repairs to Plumbing | | 17.38 | |
| Student Breakage | | 250.00 | |
| Chemical Apparatus | 330.40—\$ | | 2,691.95 |

Salaries—

| | | | |
|--|----|-------------|----------|
| Salaries—Professors and Assistants | \$ | 8,999.92—\$ | 8,999.92 |
|--|----|-------------|----------|

| | | |
|-------------------------------|----|-----------|
| Department Expenditures | \$ | 11,691.87 |
|-------------------------------|----|-----------|

ENGINEERING DEPARTMENT**Civil Engineering Division—**

| | | | |
|-------------------------------------|----------|--------|----------|
| Class Materials, etc | \$ | 63.02 | |
| Repairs and Replacements, etc. | | 74.41 | |
| Rattler | | 745.00 | |
| Briquette Machine | | 260.00 | |
| Seats for Class Room | | 35.00 | |
| Five Hand Levels | 27.80—\$ | | 1,205.23 |

Drawing Division—

| | | | |
|--|----------|--------|--------|
| Materials as Ink, Paper, etc | \$ | 30.00 | |
| Repairs and Renewals to Apparatus | | 69.99 | |
| Expenses—Architect Contest | | 25.00 | |
| Subscriptions to Magazines | | 47.20 | |
| Student Help in Making Blue Prints | | 40.07 | |
| Reference Books | | 147.79 | |
| Locks | | 40.00 | |
| Lantern Slides | 25.00—\$ | | 425.05 |

Electrical Engineering Division—

| | | | |
|---|----|--------|--|
| Junior Laboratory Supplies | \$ | 49.72 | |
| Senior Laboratory Supplies | | 59.74 | |
| Repairs and Renewals | | 104.80 | |
| Class and Laboratory Notes for Students | | 29.98 | |
| Student's assistants | | 123.85 | |
| Periodicals and Reference Books | | 40.00 | |
| Freight on Machinery | | 25.72 | |
| Machine Bases and Rheostats | | 149.58 | |
| Fuse Panel for Dynamo Laboratory | | 147.75 | |
| Electrical Instruments | | 424.80 | |

| | | |
|--|-----------------|---------------------|
| Motor Generator Set | 250.00 | |
| Circuit Breakers | 150.90—\$ | 1,556.84 |
| Forge and Foundry Division— | | |
| Labor | \$ 1,325.00 | |
| Iron and Steel for Forge Shop | 300.00 | |
| Repairs and Replacem's of Mach. & Appr. | 107.29 | |
| Supplies as Plumbago, Flour, etc. | 60.56 | |
| Coal for Forge Shop | 390.00 | |
| Pig Iron and Brass for Foundry | 150.00 | |
| Moulding Sand | 57.00 | |
| Coke for Foundry | 65.00 | |
| Rolled Steel Flasks | 149.77 | |
| Moulding Tools | 31.83 | |
| Shearing Machine | 372.59—\$ | 3,009.04 |
| Machine Shop Division— | | |
| Labor-Machinist | \$ 689.40 | |
| Repairs and Replacement of Tools, etc.,... | 188.82 | |
| Shop Material | 337.41 | |
| Vertical Milling Attachment | 125.00 | |
| Tool Room Changes | 242.00 | |
| Oil Furnace and Blower | 198.18 | |
| Five Engine Lathe Chucks | 235.98 | |
| Taper Attachment | 115.00 | |
| Internal Grinder | 100.00—\$ | 2,231.79 |
| Mechanical Engineering Division— | | |
| Laboratories Supplies | \$ 80.00 | |
| Gasoline | 14.25 | |
| Data Blanks | 40.00 | |
| Repairs and Replacements | 38.67 | |
| Rheostat for Cen. Pump Motor. | 30.00 | |
| Centrif. Fan and Motor Unit | 375.00 | |
| Drying Oven | 50.00 | |
| Water Meter Prover | 150.00 | |
| Small Scales | 20.00—\$ | 797.92 |
| Office and Unclassified Division— | | |
| Labor—Janitors | \$ 600.00 | |
| Office and Janitor Supplies | 199.31 | |
| Incidentals | 9.83—\$ | 809.14 |
| Wood Shop Division— | | |
| Labor | \$ 398.50 | |
| Supplies—Lumber, Hardware, Paint, etc. | 491.29 | |
| Repairs and Replacement of Tools, etc.,... | 290.42—\$ | 1,180.21 |
| Salaries— | | |
| Salaries—Professors and Assistants | \$ 33,566.63—\$ | 33,566.63 |
| Department Expenditures | | \$ 44,781.85 |

MILITARY DEPARTMENT**Office and Unclassified Division—**

| | | |
|--|----------|----------|
| Postage, Stationery, Record books, etc. \$ | 407.90 | |
| Military Supplies | 199.88 | |
| Upkeep of Band | 98.16 | |
| Cadet Officers Sabres | 195.05 | |
| Losses of Federal Property | 12.75 | |
| Cadet Officers Insignia | 219.25 | |
| 1920-1921 Unpaid bills | 22.75 | |
| Band Instruments | 97.51 | |
| Officers Equipment | 15.78—\$ | 1,269.03 |

Salaries—

| | | |
|---|-------------|----------|
| Salaries—Commandant and Assistants ..\$ | 5,272.30—\$ | 5,272.30 |
|---|-------------|----------|

| | | |
|--------------------------------------|-----------|-----------------|
| Department Expenditures | \$ | 6,541.33 |
|--------------------------------------|-----------|-----------------|

TEXTILE DEPARTMENT**Carding and Spinning Division—**

| | | | |
|-----------------------------------|----------|--------|--------|
| Cotton for Class Use | \$ | 339.95 | |
| Repairs and Supplies | | 168.16 | |
| Material for Cotton Grading | | 47.96 | |
| Safety First Outfit | 25.00—\$ | | 581.07 |

Dyeing Division—

| | | | |
|-------------------------------------|-----------|--------|--------|
| Chemicals and Dye Stuffs | \$ | 198.94 | |
| Glassware and Material | | 166.47 | |
| Miscellaneous Small Apparatus | 143.53—\$ | | 508.94 |

Office and Unclassified Division—

| | | | |
|------------------------------------|---------|--------|----------|
| Janitor and Engineer | \$ | 833.80 | |
| Gasoline | | 76.84 | |
| Stationery and Postage | | 38.24 | |
| Student Labor | | 74.60 | |
| Mill Boy Helper | | 300.00 | |
| Textile Periodicals | | 83.55 | |
| Freight on Donated Machinery | 9.94—\$ | | 1,416.97 |

Weaving Division—

| | | | |
|---------------------------------|----------|--------|--------|
| Warp and Filling Yarn | \$ | 550.86 | |
| Loom Supplies and Repairs | | 116.32 | |
| Knitting Yarn and Samples | | 42.86 | |
| Card Cutting Machine | | 92.07 | |
| Chairs and Table | | 62.75 | |
| Tools, Pulley, etc. | 47.81—\$ | | 912.67 |

Salaries—

| | | | |
|--|----|--------------|-----------|
| Salaries—Professors and Assistants | \$ | 10,349.90—\$ | 10,349.90 |
|--|----|--------------|-----------|

| | | |
|--------------------------------------|-----------|------------------|
| Department Expenditures | \$ | 13,769.55 |
|--------------------------------------|-----------|------------------|

PUBLIC UTILITIES DEPARTMENT

Campus Division—

| | | | |
|--|-----------|----------|----------|
| One-half Salary of Forman | \$ | 605.00 | |
| Labor | | 1,395.91 | |
| Fertilizer and Manure | | 348.53 | |
| Seed, Plants and Trees | | 199.70 | |
| Feed and Upkeep of Two Mules | | 399.40 | |
| Tools, Machinery and Repairs | | 149.55 | |
| Development of Expt. Station Road | | 418.87 | |
| Development Area Opposite Barracks 2 | | 364.81 | |
| Cement Sidewalks, etc. | 993.16—\$ | | 4,874.93 |

Construction and Repair Division—

| | | | |
|---|-------------|----------|-----------|
| Post Office Equipment | \$ | 4,499.53 | |
| Office Supplies, Postage, etc | | 49.06 | |
| Repairs and Renewals of Apparatus | | 15.29 | |
| Tools and Implements | | 25.15 | |
| Gasoline for Truck | | 73.37 | |
| Misc. Improvem's and Reprs. Pub Bldgs. | | 1,164.14 | |
| Repair to Public Buildings | | 4,496.73 | |
| Repairs to Residences, 1921-22 | | 4,876.67 | |
| Cement Floor in Kitchen Area—Bar'ks 1 | | 58.87 | |
| Cement Floor to Kitchen—Barracks 1 | | 360.19 | |
| Inside Steps to Barracks 1 | | 217.26 | |
| Fumigating Room—Cadet Hospital | | 46.51 | |
| Lattice Cadet Hospital | | 23.64 | |
| Bath and Toilet—3rd Floor Hosp. | | 128.59 | |
| 10 Grates Fronts and Hearths—Hospital | | 59.30 | |
| Miscellaneous Items—Cadet Hospital | | 126.90 | |
| Adapting School House for Residence | | 489.55 | |
| Lavatory and Toilet—Y. M. C. A. | | 68.77 | |
| Basement Room, Mail Building | | 881.50 | |
| Conversion E. Annex to 4 Appt. House ... | | 2,014.47 | |
| Garage for Truck | | 70.45 | |
| Ford Truck for C. and R. Div. | | 615.38 | |
| Shute at River for Garbage | | 91.47 | |
| Grate in Residence—Hunter | | 6.65 | |
| Extension Rear Porch—Crandalls | | 65.18 | |
| Enlarging Room—1st Floor—Marshall | | 237.90 | |
| Toilet Room—2nd Floor Marshall | | 182.89 | |
| Glass Doors—Marshall | | 29.00 | |
| Salary—Supt. C. and R. | | 1,800.00 | |
| Adding Story and Changes—Eng. Dept. | 4,077.32—\$ | | 26,851.73 |

Farm Division —

| | | | |
|-----------------------------------|----------|----------|----------|
| Ditching in Clemson Bottoms | \$ | 1,557.38 | |
| Dyke—Lewis Bottoms | | 201.48 | |
| Repairs to Barn | 78.80—\$ | | 1,837.66 |

Heat, Light and Water Division—

| | | |
|---|-------------|-----------|
| Power Station Equipment | \$ 5,502.84 | |
| Labor | 6,807.05 | |
| Materials, Repairs and Extensions | 1,905.04 | |
| Coal | 14,773.68 | |
| Repairs to Generator, Standpipe, etc | 727.22 | |
| Portable Chemical Fire Engine | 216.86 | |
| Fire Hose and Apparatus | 250.00 | |
| Light, Water and Sewer to Herdsman's House | 192.49—\$ | 30,375.18 |

Roads, Sidewalks and Hauling Division—

| | | |
|--|-------------|----------|
| Labor, Truck Drivers, etc. | \$ 1,744.38 | |
| Hire of Teams from Farm | 160.50 | |
| Gasoline, Oil, Tires and Repairs | 797.23 | |
| Road Scrape, etc. | 520.00 | |
| Salary of Supt. | 1,500.00—\$ | 4,722.11 |

Watchman and Police Division—

| | | |
|-------------------------------------|-----------|--------|
| Salary of Watchman and Police | \$ 807.50 | |
| Supplies | 26.66—\$ | 834.16 |

| | | |
|-------------------------------|----|-----------|
| Department Expenditures | \$ | 69,495.77 |
|-------------------------------|----|-----------|

Miscellaneous Department**Hospital Division—**

| | | |
|--------------------------|--------------|--------|
| Hospital Equipment | \$ 677.32—\$ | 677.32 |
|--------------------------|--------------|--------|

Library Division—

| | | |
|--|-------------|----------|
| Salaries | \$ 1,650.00 | |
| Supplies, Cards, Stationery, etc. | 15.84 | |
| Magazines | 273.25 | |
| Membership Dues | 27.50 | |
| Books | 1,000.05—\$ | 2,966.64 |

Miscellaneous Items Division—

| | | |
|---|-----------|--|
| Expenses of Trustees and Board of Visitors | \$ 897.02 | |
| Insurance Sinking Fund | 5,335.51 | |
| Contingent and Incidental Expenses | 2,478.16 | |
| Ministers | 2,403.85 | |
| Salary Y. M. C. A. Sect'y | 500.00 | |
| College Catalogue | 673.50 | |
| Annual Report to Legislature | 2.30 | |
| Commencement Expenses | 376.43 | |
| Trustees Medals | 42.20 | |
| Oil Painting—Col. R. E. Bowen | 303.40 | |
| Membership in National Associations | 91.00 | |
| Examination Booklets | 279.11 | |
| Pension—J. B. Stevens | 300.00 | |
| Scavenger Service | 480.00 | |

| | | |
|---|-------------|-----------|
| Boys Club Scholarship | 600.00 | |
| Live Stock Exhibits | 279.34 | |
| State Fair Exhibits | 345.68 | |
| Travel and Entertainment of Legislative Committees | 443.25 | |
| Salary—Magistrate | 99.96 | |
| Contingent Salaries | 591.20 | |
| Contribution to Clemson-Calhoun High School | 2,750.00—\$ | 19,271.91 |

President's Office Division—

| | | |
|---|-----------|-----------|
| Salaries—Pres. Registrar and Assits. \$ | 15,892.10 | |
| Students Cards, Forms, etc. | 695.35 | |
| Stamps, Stationery, Supplies, etc. | 989.56 | |
| Traveling Fund | 646.40 | |
| Janitor and Janitor's Supplies | 600.00—\$ | 18,823.41 |

Telephone System—

| | | |
|-----------------------------------|-----------|--------|
| Upkeep of System | \$ 148.68 | |
| Labor—Operation and Repairs | 738.36—\$ | 887.04 |

Treasurer's Office Division—

| | | |
|---|-------------|----------|
| Salaries | \$ 4,746.63 | |
| Student Cards, Books, etc. | 580.49 | |
| Recordbooks, Postage, Stamps, etc. | 774.30 | |
| Emergency Assistance | 420.00 | |
| Premium on Bonds | 75.00 | |
| Voucher File | 66.35 | |
| Auditing Assistance | 311.06—\$ | 6,973.83 |

| | | |
|-------------------------------|----|-----------|
| Department Expenditures | \$ | 49,600.15 |
|-------------------------------|----|-----------|

SUMMARY**Expenditures by Departments**

| | | |
|-----------------------------------|--------------|------------|
| Public State Work | \$ 37,391.27 | |
| Academic Department | 35,039.50 | |
| Agricultural Department | 54,431.64 | |
| Chemical Department | 11,691.87 | |
| Engineering Department | 44,781.85 | |
| Military Department | 6,541.33 | |
| Textile Department | 13,769.55 | |
| Public Utilities Department | 69,495.77 | |
| Miscellaneous Department | 49,600.15—\$ | 322,742.93 |

HATCH AND ADAMS FUND—FEDERAL FUNDS

(South Carolina Agricultural Experiment Station.)

Receipts—

| | |
|------------------|--------------|
| Adams Fund | \$ 15,000.00 |
|------------------|--------------|

SUPPLEMENTARY REPORTS

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| | |
|------------------|--------------|
| Hatch Fund | 15,000.00 |
| Sales | 4,182.29 |
| | <hr/> |
| | \$ 34,182.29 |
| | <hr/> |

Expenditures—

| | |
|--|--------------|
| Salaries | \$ 18,943.14 |
| Labor | 5,164.10 |
| Publications | 451.03 |
| Postage and Stationery | 580.54 |
| Freight and Express | 219.39 |
| Heat, Light, Water and Power | 407.44 |
| Chemicals and Laboratory Supplies | 391.40 |
| Seed, Plants and Sundry Supplies | 1,046.97 |
| Fertilizers | 863.49 |
| Feeding Stuffs | 964.66 |
| Library | 754.70 |
| Tools, Machinery and Appliances | 437.33 |
| Furniture and Fixtures | 174.01 |
| Scientific Apparatus and Specimens | 1,026.62 |
| Live Stock | 12.00 |
| Traveling Expenses | 291.42 |
| Contingent Expenses | 5.00 |
| Buildings and Land | 609.69 |

\$ 32,342.93

Overdraft from previous year 421.85

\$ 32,764.78

Balance on hand June 30th, 1922 \$ 1,417.51

\$ 34,182.29

SMITH-LEVER EXTENSION WORK

State Federal and County Funds.)

Receipts—

| | |
|--------------------------------|------------------------|
| Federal Appropriation | \$147,902.57 |
| State Appropriation | \$ 94,147.00 |
| Paid by County Officials | 43,755.57—\$137,902.57 |
| | <hr/> |
| | \$285,805.14 |
| | <hr/> |

Note: \$19,852.56 additional County Funds entered on the Treasurer's books, but not included in this report.

SUPPLEMENTARY REPORTS

Expenditures—

| | |
|---|--------------|
| Salaries | \$218,247.00 |
| Labor | 85.15 |
| Printing and Distribution—Publications | 6,103.89 |
| Stationery and Small Printing | 838.17 |
| Postage, Telegraph, Freight and Express | 3,043.07 |
| Heat, Light, Water and Power | 620.12 |
| Supplies | 1,754.14 |
| Library | 111.39 |
| Tools, Machinery and Appliances | 22.03 |
| Furniture and Fixtures | 3,680.49 |
| Scientific Apparatus and Specimens | 113.35 |
| Traveling Expenses | 50,092.32 |
| Contingent Expenses | 1,094.02 |
| | <hr/> |
| | \$285,805.14 |

REVOLVING ACCOUNTS**Receipts—**

| | |
|--------------------------------------|--------------|
| Balance on hand July 1st, 1921 | \$114,083.78 |
| Receipts for Fiscal Year | 281,334.13 |
| | <hr/> |
| | \$395,417.91 |

Expenditures—

| | |
|--|-------------|
| Animal Husbandry | \$ 5,661.79 |
| Creamery | 19,856.29 |
| Dairy | 10,956.09 |
| Farm | 12,851.31 |
| Poultry | 16.54 |
| Veterinary Hospital | 2,237.48 |
| Coast Experiment Station | 495.60 |
| Pee Dee Experiment Station | 7,491.42 |
| Athletic Association | 7,810.71 |
| Cadet Exchange | 18,265.13 |
| Hotel | 17,472.79 |
| Cooperative Cotton Testing | 1,060.19 |
| Education of Disabled Soldiers | 12,938.35 |
| Barracks Fire Loss | 5,166.61 |
| Hog Cholera Serum Work | 31,623.12 |
| Insurance | 11,701.17 |
| Lost Government Property (Transferred to College.) | 20.02 |
| Manufacture of State Flags | 85.72 |
| Summer School | 8,985.17 |
| Coal Sales | 2,881.10 |
| Breakage | 528.80 |
| Miscellaneous (\$204.99 Transferred to College.) | 404.17 |

SUPPLEMENTARY REPORTS

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| | |
|--|--------------|
| Magistrate Fines (Transferred to College.) | 302.05 |
| Nursery Tags | 916.63 |
| Receiving Account (\$13,073.81 Transferred to College) | 13,198.81 |
| Rents (\$9,714.27 Transferred to College.) | 9,852.27 |
| Smith-Hughes Work | 24,564.11 |
| Smith-Lever Interest Account | 1,690.21 |
| Student Loan Funds and Medals | 450.00 |
| Wood Shop | 1,052.61 |
| Student Fees (\$4,892.83 Transferred to College.) | 4,906.43 |
| *Building Sinking Fund | 51,940.93 |
| Reserve Fund (Transferred to College) | 77,209.35 |
| | <hr/> |
| | \$364,592.97 |
| Balance on hand June 30th, 1922 | 30,824.94 |
| | <hr/> |
| | \$395,417.91 |

*Note: \$44,861.93 transferred from Building Sinking

Fund to cover deficit on the following accounts:

| | |
|---------------------------|--------------|
| Animal Husbandry | \$ 12,502.29 |
| Creamery | 8,265.06 |
| Dairy | 10,294.48 |
| Farm | 11,511.04 |
| Poultry | 358.48 |
| Veterinary Hospital | 487.27 |
| | <hr/> |
| | \$ 43,418.62 |
| Barracks Fire Loss | 1,443.31 |
| | <hr/> |
| | \$ 44,861.93 |

CADET FUND

Receipts—

| | |
|--------------------------------------|---------------------|
| Balance on hand July 1st, 1921 | \$ 7,848.49 |
| Miscellaneous | \$ 296.72 |
| Subsistence | 153,769.62 |
| Room, Heat, Light and Water | 16,070.70 |
| Laundry | 14,650.58 |
| Hospital | 12,110.29 |
| Uniforms | 29,304.37 |
| Incidentals | 6,999.54 |
| Activity Fee | 7,732.14 |
| Breakage | 2,875.87 |
| Diplomas | 477.85—\$244,287.68 |
| | <hr/> |
| | \$252,136.17 |

Expenditures—

| | |
|---|-----------------------|
| Subsistence | \$148,030.17 |
| Room, Heat, Light and Water | 16,100.48 |
| Laundry | 12,759.22 |
| Hospital | 10,100.60 |
| Uniforms | 29,387.58 |
| Incidentals | 6,135.60 |
| Activity Fees | 7,732.14 |
| Breakage | 2,875.87 |
| Diplomas | 471.95 |
| Transferred to Laundry Building. (From Laundry Receipts) | 1,891.36 |
| Miscellaneous | 3,197.19—\$238,682.16 |
| Balance on hand June 30, 1922 | 13,454.01 |
| | <hr/> |
| | \$252,136.17 |

STUDENT DEPOSITS**Receipts—**

| | |
|--------------------------------------|--------------|
| Balance on hand July 1st, 1921 | \$ 392.10 |
| Deposits | 65,976.35 |
| | <hr/> |
| | \$ 66,368.45 |
| Overdraft June 30th, 1922 | \$ 73.22 |
| | <hr/> |
| | \$ 66,441.67 |

Expenditures—

| | |
|-------------------|--------------|
| Checks Paid | \$ 66,441.67 |
| | <hr/> |
| | \$ 66,441.67 |

STATE APPROPRIATIONS

(Reported by College Fiscal Year.)

Appropriations—(Paid through Comptroller General's Office)

| | |
|---|--------------|
| Agricultural Research Work | \$ 49,083.73 |
| Crop Pest and Disease Work | 9,832.97 |
| Live Stock Sanitary Work | 51,430.06 |
| Tick Eradication | 15,679.68 |
| Slaughtering of Diseased Live Stock | 2,118.42 |
| | <hr/> |
| | \$128,144.86 |

Expenditures— (Paid through Comptroller General's Office.)

| | |
|---|--------------|
| Agricultural Research Work | \$ 49,083.73 |
| Crop Pest and Disease Work | 9,832.97 |
| Live Stock Sanitary Work | 51,430.06 |
| Tick Eradication | 15,679.68 |
| Slaughtering of Diseased Live Stock | 2,118.42 |
| | <hr/> |
| | \$128,144.86 |

RECAPITULATION

Receipts—

| | |
|------------------------------|--------------|
| Cash on hand July 1st, 1921— | |
| Revolving Accounts | \$114,083.78 |
| Cadet Funds | 7,848.49 |
| Cadet Deposits | 392.10 |

 \$122,324.37

| | |
|---|--------|
| Less Overdraft on S. C. Expt. Station Account | 421.85 |
|---|--------|

 \$121,902.52

| | |
|---|------------|
| College Account (Including \$77,209.35 from Reserve Fund and \$112,842.11 State Loan) | 394,245.80 |
|---|------------|

| | |
|------------------------------------|-----------|
| Hatch and Adams Fund (U. S.) | 34,182.29 |
|------------------------------------|-----------|

| | |
|---|------------|
| Smith-Lever Extension Work (\$43,755.57 County Funds included, but paid by County Officials)... | 285,805.14 |
|---|------------|

| | |
|-----------------------|------------|
| Revolving Funds | 281,334.13 |
|-----------------------|------------|

| | |
|-------------------|------------|
| Cadet Funds | 244,287.68 |
|-------------------|------------|

| | |
|----------------------|-----------|
| Cadet Deposits | 65,976.35 |
|----------------------|-----------|

State Appropriations paid through Comptroller General's Office—

| | |
|----------------------------------|--------------|
| Agricultural Research Work | \$ 49,083.73 |
|----------------------------------|--------------|

| | |
|----------------------------------|----------|
| Crop Pest and Disease Work | 9,832.97 |
|----------------------------------|----------|

| | |
|------------------------|-----------|
| Tick Eradication | 15,679.68 |
|------------------------|-----------|

| | |
|--------------------------------|-----------|
| Live Stock Sanitary Work | 51,430.06 |
|--------------------------------|-----------|

| | |
|---|-----------------------|
| Slaughtering of Diseased Live Stock | 2,118.42—\$128,144.86 |
|---|-----------------------|

 \$1,555,878.77

Expenditures—

| | |
|-----------------------|--------------|
| College Account | \$322,742.93 |
|-----------------------|--------------|

| | |
|-------------------------------------|-----------|
| Hatch and Adams Funds (U. S.) | 32,342.93 |
|-------------------------------------|-----------|

| | |
|---|------------|
| Smith Lever Extension Work (Including \$43,755.57 County Funds) | 285,805.14 |
|---|------------|

| | |
|-----------------------|------------|
| Revolving Funds | 364,592.97 |
|-----------------------|------------|

| | |
|-------------------|------------|
| Cadet Funds | 238,682.16 |
|-------------------|------------|

| | |
|-------------------------|-----------|
| Cadet Checks Paid | 66,441.67 |
|-------------------------|-----------|

State Appropriations paid through Comptroller General's Office—

| | |
|----------------------------------|--------------|
| Agricultural Research Work | \$ 49,083.73 |
|----------------------------------|--------------|

| | |
|----------------------------------|----------|
| Crop Pest and Disease Work | 9,832.97 |
|----------------------------------|----------|

| | |
|------------------------|-----------|
| Tick Eradication | 15,679.68 |
|------------------------|-----------|

| | |
|--------------------------------|-----------|
| Live Stock Sanitary Work | 51,430.06 |
|--------------------------------|-----------|

| | |
|---|-----------------------|
| Slaughtering of Diseased Live Stock | 2,118.42—\$128,144.86 |
|---|-----------------------|

 \$1,438,752.66

| | |
|----------------------------------|------------|
| Cash on hand June 30, 1922 | 117,126.11 |
|----------------------------------|------------|

 \$1,555,878.77

SUPPLEMENTARY REPORTS

STATEMENT OF CASH IN BANKS

(Close of Business, June 30, 1922.)

| | | |
|--|------------------------|-----------------------|
| National Bank of Newberry (Smith-Lever.) | 10,000.00 | |
| Newberry, S. C. | | |
| Union Savings Bank (Smith-Lever) | 9,980.00 | |
| Bennettsville, S. C. | | |
| Farmers and Merchants Bank | 17,500.00 | |
| Anderson, S. C. | | |
| National Bank of Sumter | 9,000.00 | |
| Sumter, S. C. | | |
| Bank of Pendleton (Time Dep.) | 5,000.00 | |
| Pendleton, S. C. | | |
| Farmers Bank of Abbeville County | 7,500.00 | |
| Abbeville, S. C. | | |
| Commercial Bank | 6,000.00 | |
| Greenwood, S. C. | | |
| National Bank of Abbeville | 6,000.00 | |
| Abbeville, S. C. | | |
| The Fort Hill Bank | 2,000.00 | |
| Clemson College, S. C. | | |
| Peoples Savings Bank | 6,000.00 | |
| Abbeville, S. C. | | |
| Bank of Greenwood | 6,000.00 | |
| Greenwood, S. C. | | |
| Union Savings Bank | 15,000.00 | |
| Bennettsville, S. C. | | |
| Palmetto National Bank | 10,000.00—\$109,980 00 | |
| Columbia, S. C. | | |
| Bank of Pendleton (Checking Account) | | |
| Balance General Acct. | \$ 58,441.10 | |
| Less: | | |
| Smith-Lever Div. overdraft | 15,340.30 | |
| Net Balance Bank Certificate | | 43,100.80 |
| Less: Checks Outstanding: | | |
| College Division | 31,241.77 | |
| Smith-Lever Division | 4,639.70—\$ | 35,881.47—\$ 7,219.33 |
| Total Cash in Banks | | \$117,199.33 |
| Less Overdraft Deposit Ledgers | | 73.22 |
| | | <hr/> |
| | | \$117,126.11 |

Report of the Auditor

LETTER OF TRANSMISSAL

Clemson College, Dec. 15, 1922.

Honorable Board of Trustees of the Clemson Agricultural College of S. C.
Gentlemen:

I beg to transmit to you herewith an audit of the books, vouchers, and accounts of the Clemson Agricultural College for the fiscal year ending June 30th, 1922, as indicated by the body of this report. Mr. L. A. Searson acted as a representative of this department in actually making the audit.

Yours very truly,

W. W. BRADLEY,
State Bank Examiner.

GENERAL REPORT

(Office of Mr. Sam'l W. Evans, Treasurer)

Mr. W. W. Bradley, State Bank Examiner,
Columbia, S. C.

Dear Sir:

General Comments—

It seems appropriate that I should present this report with a few comments regarding the apparent qualifications of the College Treasurer and his staff of assistants. During the progress of this audit, I have noted with especial interest the efficient methods followed in the general conduct of this office. Although the services of three or more assistants are required to carry out the general office work, in this department, the Treasurer does not in any way shift the responsibility, but is, at all times, fully prepared to give a personal account of every transaction.

In several previous audits, the writer has had occasion to make favorable reports concerning this officer's work—and it is a pleasure to note the same degree of efficiency, at the present time.

It should also be a matter of interest to the Trustees of the college, and to other parties concerned, to know that closest co-operation exists between the offices of President and Treasurer. The President of the College manifests his deep interest in the accounting program, and it is quite evident that he is, at all times, in intimate touch with matters pertaining to the financial status of the institution.

Although my engagement does not include any examination of the physical properties of the college, I would like to call attention to the very interesting records which are kept in this connection. A classified inventory of all property owned by Clemson College is always available, and it is possible to ascertain, to the most minute detail, every article of value in each department, or division, throughout the plant. The records indicate that the present holdings of Clemson College represent, in value, upward of \$2,000,000.00—and the inventories on file present an elaborate classification, which is covered by the following condensed statement:

STATEMENT OF COLLEGE INVENTORY

(June 30, 1921)

| | |
|--------------------------------------|----------------|
| Office Equipment | \$ 46,378.26 |
| Household Equipment | 56,298.44 |
| Education and Recreation | 177,954.68 |
| Library Equipment | 44,807.80 |
| Vehicles | 10,700.49 |
| Live Stock | 51,876.77 |
| Medical and Surgical Equipment | 1,424.84 |
| Military Equipment | 2,952.97 |
| General Plant | 181,079.80 |
| Buildings | 1,107,565.00 |
| Real Estate | 354,479.00 |
| | <hr/> |
| | \$2,035,518.05 |
| Supplies | 86,450.77 |
| | <hr/> |
| Total | \$2,121,968.82 |

I am sure that much more could be conservatively added to these comments, with respect to the financial statistics of the institution, as well as opinions based upon my observations in other particulars. However, it is not essential to include in this report such matters as are so ably dealt with in the annual reports submitted by the President of the College.

I would like to close these remarks with a word of appreciation of the many courtesies extended to me by the President, the Treasurer and others while I was engaged on this examination. The assistance rendered by the Treasurer and his staff greatly facilitated my work and aided me considerably in forming my conclusions.

Books and Records—

It is my opinion that the needs of the office are adequately provided for, from an accounting standpoint. The bookkeeping is admirable

in every respect. Therefore, I do not deem it necessary to suggest any changes in the accounting methods. (I have made some verbal suggestions to the Treasurer as to minor details.)

So far as I have been able to ascertain, adequate filing facilities have never been provided for the Treasurer's office—and it has been necessary to make the most of the means at hand. My investigation, in this respect, leads me to conclude that, in view of the great volume of work and the mass of records accumulating annually, the business of the department has outgrown available filing space. I would, therefore, respectfully suggest that the President investigate this matter and that he take the steps necessary, in his judgement, to secure such filing facilities as the activities of the office demand. Careful and systematic preservation of the permanent and valuable records of this department is a matter which the College authorities can scarcely afford to neglect. The records are filed with remarkable accuracy under existing conditions, but one unfamiliar with the work could not readily secure desired information without assistance. I would recommend that competent help be secured for the purpose of re-arranging the files, as the task would, doubtless, involve more work than could be handled by the present office force, in addition to routine duties. (It is the writer's opinion that the office, at present, is undermanned—and I believe that it would be a wise policy to employ another high class assistant, in order that the Treasurer may be relieved of much clerical work which he now performs—thus leaving his mind alert for the great responsibilities and administrative duties which devolve upon him, as an executive officer. A utility man to act as audit and filing clerk, in my view, would be a valuable asset to the department.

Especial attention is directed to the College budget, under the standard College classification. The operating cost can be easily determined from any desired angle, under the system in use. It is noted, however, that, while the classification of expenditures above referred to could not be very well improved on, it is necessary for the Treasurer to work out a revised classification (for the calendar year) to meet the requirements of the State Budget Commission—because the college fiscal year closes on June 30th instead of on December 31st. This, naturally, requires much additional work and adds a hardship to the Treasurer and his assistants.

Individual accounts are kept with the cadets from the date of matriculation, and it is well to note that this systematic procedure—when combined with the private banking business known as the "Cadet Deposit" division—means the posting of approximately 2,000 subsidiary accounts, under control of general accounts on the College ledger. These records are kept principally for convenience of the student body.

I find that all vouchers are itemized and properly approved by the President and by the department and division heads before checks are issued in payment of salaries, accounts, etc. All purchases are based upon requisitions, approved by the President, and invoices are, apparently, carefully audited before they are paid. The vouchers are filed systematically and are easily audited.

Special References—

In view of the decrease in the sale of fertilizer, the college has lost considerable revenue on account of the fertilizer inspection tax, as compared with former receipts from this source. While the requirements of the college, under continued growth, have naturally increased from year to year, statistics show that the fertilizer tax, (the principal source of revenue,) was less in the year ended June 30, 1922, than in any previous year since the college opened. The income from this source, during the history of the tax, has ranged from something over \$313,000.00 to about \$126,000.00. For the year ending June 30, 1922, the amount was only \$126,118.07. It is noted, in this connection, that the college has kept continuously in operation, and on the up-grade of progress, for over thirty years, without the aid of State appropriations—and that the present property valuation (practically free from incumbrance) is over \$2,000,000.00. During the past two or three years, however, moderate loans have been necessary to supplement the income, because of the decrease in fertilizer tax revenues.

The reserve fund set aside as of date of July 1, 1921, was transferred, and necessarily absorbed, during the year ended June 30, 1922. In view of the fact that funds on hand June 30, 1922 were needed for current expenses, immediately payable, no reserve was set aside with the past fiscal year.

The "Building Sinking Fund," (representing saving on the budget,) which was reserved for the purpose of erecting a new hospital for the cadets, was transferred (by order of the Board of Trustees) during the year, for the purpose of covering deficits in the following re-investment accounts, to wit:

Animal Husbandry,
Creamery,
Dairy,
Farm,
Poultry,
Veterinary Hospital,
Barracks Fire Loss
and New Laundry.

It appears, therefore, that the intention of the Board of Trustees to build this hospital plant has been defeated, unless some further provision can be made to carry out the original plan.

COLLEGE FUND**Condensed Statement—**

A condensed statement of receipts and disbursements, on account of the general College fund, will be found on page 6 of this report. This statement, which is self-explanatory, is supported by schedules showing the distribution of expenditures to the various departments, divisions and objects.

College Expenditures—

A classified statement of expenditures, for general college purposes, is submitted on pages 7-16. The statement is sub divided into departmental expenditures, and the objects under each division are also given. The appropriations are shown, by comparison, and a summary appears on page 17.

CONDENSED STATEMENT RECEIPTS AND DISBURSEMENTS

(College Account, Year ended June 30, 1922)

RECEIPTS**Revenues from Various Sources—**

| | | |
|---|--------------|--------------|
| Privilege Fertilizer Inspection Tax | \$126,118.07 | |
| Morrill and Nelson Funds (U. S.) | 25,000.00 | |
| Interest on Lanscrip | 5,754.00 | |
| Interest Clemson Bequest | 3,512.36 | |
| Interest on Deposits and other Misc. Receipts | 13,600.87 | |
| Tuition from Students | 15,601.94 | |
| Matriculation and Laboratory Fees | 4,892.83 | |
| Rentals | 9,714.27 | \$204,194.34 |

| | | |
|--------------------|--|-----------|
| Reserve Fund | | 77,209.35 |
|--------------------|--|-----------|

State Loan

| | | |
|--------------------|-----------|------------|
| Nov. 15, 1921..... | 20,000.00 | |
| Nov. 15, 1921..... | 92,842.11 | 112,842.11 |

| | | |
|-------------|--|--------------|
| Total | | \$394,245.80 |
|-------------|--|--------------|

EXPENDITURES**Public State Work—**

| | | |
|---------------------------------------|--------------|--|
| Scholarships and Advertisements | \$ 14,461.98 | |
|---------------------------------------|--------------|--|

Fertilizer Inspection and Analysis:

| | | |
|------------------|-------------|-----------|
| Inspection | \$10,298.32 | |
| Analysis | 12,630.97 | 22,929.29 |
| | | 37,391.27 |

College Operating Expenses—

| | | |
|--------------------------------------|--------------|------------|
| Salaries | \$154,809.18 | |
| Fuel, Labor and Other Expenses | 92,580.65 | 247,389.83 |

| | | |
|--|--|--------------|
| | | \$284,781.10 |
|--|--|--------------|

Buildings and Equipment—

| | | |
|--|--|-----------|
| | | 37,961.83 |
|--|--|-----------|

| | | |
|--|--|--------------|
| | | \$322,742.93 |
|--|--|--------------|

| | | |
|--|--|-----------|
| Cash Balance to account for June 30, 1922..... | | 71,502.87 |
|--|--|-----------|

| | | |
|-------------|--|--------------|
| Total | | \$394,245.80 |
|-------------|--|--------------|

GENERAL STATEMENT OF COLLEGE FUND

Departmental and Divisional Expenditures vs. Appropriations
(Clemson College Standard Classification—year ended June 30, 1922)

PUBLIC STATE WORK

| | | |
|--|--------------|----------------------|
| A—Scholarships and Advertisements | \$ 14,461.98 | \$ 20,000.00 |
| B—Fertilizer Inspection and Analysis— | | |
| Salaries | \$8 549.80 | |
| Apparatus | 176.93 | |
| Chemicals | 51.23 | |
| Gasoline | 253.28 | |
| Record Books, Stationery, etc. | 134.95 | |
| Incidentals | 41.85 | |
| Labor—Janitor | 300.00 | |
| Extra Help Laboratory and Office.... | 420.00 | |
| Emergency Supplies, Labor, etc..... | 259.12 | |
| Traveling Expenses | 111.16— | 10,298.32— 11,570.00 |
| Salaries | 3,999.96 | |
| Labor—Janitor | 600.00 | |
| Tags and Printing | 2,451.00 | |
| Inspectors—Pay and Travel | 4,789.92 | |
| Frt., Postage and Incidentals | 292.99 | |
| Legal Services | 187.50 | |
| Condensed Fertilizer Bulletins | 309.60— | 12,630.97— 28,700.00 |
| | <hr/> | <hr/> |
| | \$37,391.27 | \$60,270.00 |
| Excess Appropriations Over Expenditures | 22,878.73 | |
| | <hr/> | <hr/> |
| | \$60,270.00 | \$60,270.00 |
| | <hr/> | <hr/> |

COLLEGE WORK

A—Academic Department—

| | | | |
|--|----------|--------|----------|
| 1. English Division— | | | |
| Repairs to Class Room Furniture \$.90 | | | |
| Stationery, etc. | 13.10—\$ | 14.00 | \$ 35.00 |
| | <hr/> | | |
| 2. History Division— | | | |
| Periodicals for Clas use | | 10.80 | 125.00 |
| 3. Mathematics Division— | | | |
| Repairs to Furniture & Equipment | | 18.55 | 25.00 |
| 4. Office and Unclassified— | | | |
| Janitor | 390.00 | | |
| Chalk, Erasers, Stationery, etc... | 145.93— | 535.93 | 600.00 |
| | <hr/> | | |

5. Physics Division—

| | | | |
|----------------------------------|--------|--------|--------|
| Laboratory Supplies & Repairs | 149.51 | | |
| Apparatus for Mechanics & Heat | 144.94 | | |
| Apparatus for Electricians, etc. | 156.64 | | |
| Radiator for Basement | 22.31— | 473.40 | 600.00 |

6. Salaries—

| | | | |
|--|--------------------|--------------------|--|
| Professors and Assistants | 33,986.82 | 35,550.00 | |
| | <u>\$35,039.50</u> | | |
| Excess Appropriations over Expenditures | 1,895.50 | | |
| | <u>\$36,935.00</u> | <u>\$36,935.00</u> | |

B—Agricultural Department—

1. Agricultural Education Division—

| | | | |
|---------------------------------|-----------|--------|-------------|
| Transportation of Students..... | \$134.07 | | |
| Printing School Leaflets | 188.80 | | |
| Lantern Slides and Plates | 68.00 | | |
| Office Furniture | 252.22 | | |
| Laboratory Equipment | 166.16—\$ | 809.25 | \$ 1,050.00 |

2. Agronomy Division—

| | | | |
|-------------------------------------|----------|----------|-------------|
| Cement, Gasoline, Oil, etc..... | 184.33 | | |
| Seed Score Cards, etc. | 69.72 | | |
| Repairs & Parts for Machinery.. | 29.86 | | |
| Material for Class use | 88.99 | | |
| Cement, Gasoline, Oil, etc. | 100.00 | | |
| Laboratory Equipment | 197.52 | | |
| Office Equipment | 46.51 | | |
| Machinery for Farm Laboratory | 795.07 | | |
| Balances, etc., for Soil Laboratory | 333.86 | | |
| Small Apparatus for Soil Laby. | 277.94 | | |
| Closets and Sinks | 65.77 | | |
| Three Skylights | 75.00—\$ | 2,264.57 | \$ 2,543.00 |

3. Animal Husbandry Division—

| | | | |
|----------------------------------|-----------|----------|-------------|
| Salary Herdsman (1-3) | \$416.65 | | |
| Labor | 475.35 | | |
| Repairs to Fences | 198.30 | | |
| Expense of Instructors, Contests | 29.67 | | |
| Requisition Books—(Live Stock) | 249.49 | | |
| Feed for Live Stock | 2,663.73 | | |
| Pasture Improvements | 500.03 | | |
| Machine Shed | 279.88 | | |
| Miscellaneous Equipment | 290.73 | | |
| Labor for New Fencing | 700.20—\$ | 5,804.03 | \$ 6,015.00 |

4. Botany and Bacteriology Division—

| | | | |
|---------------------------------|--------|--------------|-------------|
| Botanical Publications | 89.68 | | |
| Glassware and Lab'y. Supplies.. | 483.40 | | |
| Collecting Materials | 185.60 | | |
| Repairs and Replacements | 62.36 | | |
| Chart (Mimeograph) | 177.01 | | |
| Hydrogen Detector | 250.00 | | |
| Physiological Apparatus | 195.24 | —\$ 1,443.29 | \$ 1,650.00 |

5. Dairy Division—

| | | | |
|-------------------------------------|--------|--------------|-------------|
| Salary Creamery Foreman (1½) | 719.75 | | |
| Salary Dairy Herd Foreman(1-3) | 14.98 | | |
| Labor—Dairy Herd for Teaching | 450.07 | | |
| Feed for Dairy Cattle—Teaching | 499.51 | | |
| Freight and Repairs | 59.31 | | |
| Glassware and Chemicals | 124.91 | | |
| Operating and Upkeep Expenses | 142.56 | | |
| Upkeep of Fences | 198.99 | | |
| Repairs to Refrigerating Plant | 99.14 | | |
| Cork Floor—Dairy Building | 50.00 | | |
| Small Laboratory Equipment | 75.96 | | |
| Hand Butter Filler | 17.00 | | |
| Moisture Test Scales | 31.50 | | |
| Cheese Making Equipment | 161.80 | | |
| Additional Calf Barn Equipment | 170.30 | | |
| Clipping Machine | 90.55 | | |
| Guernsey Bull | 500.00 | | |
| Cement Manger—West wing..... | 197.80 | | |
| Four Temporary Bull Pens | 298.29 | | |
| Cement Walk—Calf Barn | 84.54 | | |
| Doors in Barn | 47.00 | | |
| New Doors for Three Sides..... | 36.32 | | |
| Litter Truck—Calf Barn | 96.48 | | |
| Completion of Cooling Room..... | 23.57 | | |
| Removing two Partitions | 38.80 | | |
| Equipment for Federal Board | | | |
| Work .. | 8.82 | —\$ 4,237.95 | \$ 5,107.00 |

6. Entomology and Zoology Division—

| | | | |
|---------------------------------|--------|------------|-----------|
| Class and Laboratory Material.. | 123.00 | | |
| Labor | 33.43 | | |
| Repairs to Instruments | 75.80 | | |
| Spraying and Dusting Apparatus | 145.32 | | |
| Microscope for Laboratory | 150.00 | —\$ 527.55 | \$ 665.00 |

7. Geology and Mineralogy Division—

| | | | |
|----------------------|-------|------------|-----------|
| Supplies, etc. | 49.97 | | |
| Labor | 29.00 | | |
| Lantern Slides | 30.00 | —\$ 108.97 | \$ 115.00 |

8. Horticulture Division—

| | | | |
|----------------------------------|--------|--------------|-------------|
| Salary Greenhouse Foreman 1½ | 605.00 | | |
| Salary Horticulture Foreman (1½) | 500.00 | | |
| Labor | 884.94 | | |
| Fertilizer | 100.00 | | |
| Seed, Plants, etc. | 198.82 | | |
| Greenhouse Supplies & Repairs | 97.69 | | |
| Coal for Greenhouse | 94.25 | | |
| Spray Apparatus and Materials | 100.00 | | |
| Feed for Two Mules | 249.42 | | |
| Rubber Hose | 21.80 | | |
| Filing Cards and Cabinet | 99.72 | | |
| Tools for Class Use | 31.42 | —\$ 2,983.06 | \$ 4,485.00 |

9. Office and Unclassified Division—

| | | | |
|--------------------------------|----------|--------------|-------------|
| Janitors, Agri. Hall and Dairy | 1,047.05 | | |
| Gasoline | 201.97 | | |
| Attendance Conventions, etc. | 100.00 | | |
| Stationery, Postage, etc. | 514.38 | | |
| Upkeep of Building | 128.31 | | |
| Mineograph Stand | 22.50 | | |
| Shades | 60.00 | —\$ 2,074.21 | \$ 2,210.00 |

10. Veterinary Science Division—

| | | | |
|-----------------------------------|--------|------------|-----------|
| Janitor and Extra Labor | 522.00 | | |
| Veterinary Journals | 4.00 | | |
| Repairs to Gates, Fences, etc. | 74.70 | | |
| Stoves for Office and Class Rooms | 56.84 | | |
| Desk | 67.50 | —\$ 725.04 | \$ 860.00 |

| | | |
|--|-----------|-----------|
| 11. Salaries—Professors and Assistants | 33,453.72 | 37,263.34 |
|--|-----------|-----------|

| |
|--------------|
| \$ 54,431.64 |
|--------------|

| |
|--|
| Excess of Appropriations over Expenditures \$ 7,531.70 |
|--|

| | |
|--------------|--------------|
| \$ 61,963.34 | \$ 61,963.34 |
|--------------|--------------|

C—Chemical Department—

1. Chemistry Division—

| | | | |
|--------------------------|--------|--------------|-------------|
| Chemical Apparatus | 500.00 | | |
| Chemicals and Supplies | 500.00 | | |
| Gasoline | 255.04 | | |
| Books, Journals, Binding | 199.38 | | |
| Repairs to Apparatus | 190.90 | | |
| Incidentals | 148.85 | | |
| Labor—Janitor | 300.00 | | |
| Repairs to Plumbing | 17.38 | | |
| Student Breakage | 250.00 | | |
| Chemical Apparatus | 330.40 | —\$ 2,691.95 | \$ 2,975.00 |

| | | |
|---|--------------|--------------|
| 2. Salaries—Professors and Assistants | 8,999.92 | 9,000.00 |
| | <hr/> | <hr/> |
| | \$ 11,691.87 | |
| Excess Appropriations over Expenditures | 283.13 | |
| | <hr/> | <hr/> |
| | \$ 11,975.00 | \$ 11,975.00 |
| | <hr/> | <hr/> |

D—Engineering Department—

| | | | |
|---------------------------------------|------------|-------------|-------------|
| 1. Civil Engineering Division— | | | |
| Class Materials | \$ 63.02 | | |
| Repairs and Replacement, etc. | 74.41 | | |
| Rattler | 745.00 | | |
| Briquette Machine | 260.00 | | |
| Seats for Class Room | 35.00 | | |
| Five Hand Levels | 27.80— | \$ 1,205.23 | \$ 1,345.00 |
| | <hr/> | | |
| 2. Drawing Division— | | | |
| Materials, Ink, Paper, etc. | 30.00 | | |
| Repairs, Renewals to Apparatus | 69.99 | | |
| Expenses—Architect Contest | 25.00 | | |
| Subscription to Magazines | 47.20 | | |
| Student help—making Blueprints | 40.07 | | |
| Reference Books | 147.79 | | |
| Locks | 40.00 | | |
| Lantern Slides | 25.00— | \$ 425.05 | \$ 465.00 |
| | <hr/> | | |
| 3. Electrical Engineering Division— | | | |
| Junior Laboratory Supplies | 49.72 | | |
| Senior Laboratory Supplies | 59.74 | | |
| Repairs and Renewals | 104.80 | | |
| Class and Lab'y Notes for | | | |
| Students | 29.98 | | |
| Students Assistance | 123.85 | | |
| Periodicals and Reference Books | 40.00 | | |
| Freight on Machinery | 25.72 | | |
| Machine Bases and Rheostats.... | 149.58 | | |
| Fuse Panel for Dynamic Lab'y.... | 147.75 | | |
| Electrical Instruments | 424.80 | | |
| Motor Generator Set | 250.00 | | |
| Circuit Breakers | 150.90— | \$ 1,556.84 | \$ 1,670.00 |
| | <hr/> | | |
| 4. Forge and Foundry Division— | | | |
| Labor | \$1,325.00 | | |
| Iron and Steel—Forge Shop..... | 300.00 | | |
| Repairs,—Machinery and Appr. | 107.29 | | |
| Supplies—Plumbago, Flour, etc. | 60.56 | | |
| Coal for Forge Shop | 390.00 | | |
| Pig Iron and Brass—Foundry.... | 150.00 | | |

| | | | |
|---------------------------|--------|-------------|-------------|
| Moulding Sand | 57.00 | | |
| Coke for Foundry | 65.00 | | |
| Rolled Steel Flasks | 149.77 | | |
| Moulding Tools | 31.83 | | |
| Shearing Machine | 372.59 | \$ 3,009.04 | \$ 3,082.00 |

5. Machine Shop Division—

| | | | |
|---------------------------------------|--------|-------------|-------------|
| Labor—Machinist | 689.40 | | |
| Repairs, Replacement Tools, etc. | 188.82 | | |
| Shop Material | 337.41 | | |
| Vertical Milling Attachment | 125.00 | | |
| Tool Room Changes | 242.00 | | |
| Oil Furnace and Blower | 198.18 | | |
| Five Engine Lathe Chucks | 235.98 | | |
| Taper Attachment | 115.00 | | |
| Internal Grinder | 100.00 | \$ 2,231.79 | \$ 2,729.00 |

6. Mechanical Engineering Division —

| | | | |
|--------------------------------------|--------|-----------|-----------|
| Laboratories Supplies | 80.00 | | |
| Gasoline | 14.25 | | |
| Date Blanks | 40.00 | | |
| Repairs and Replacements | 38.67 | | |
| Rheostat—Cen. Pump Motor | 30.00 | | |
| Centrifugal Fan and Motor Unit | 375.00 | | |
| Drying Oven | 50.00 | | |
| Water Meter Prover | 150.00 | | |
| Small Scales | 20.00 | \$ 797.92 | \$ 800.00 |

7. Office and Unclassified Division—

| | | | |
|-------------------------------------|--------|-----------|-----------|
| Labor—Janitors | 600.00 | | |
| Office and Janitor's Supplies | 199.31 | | |
| Incidentals | 9.83 | \$ 809.14 | \$ 970.00 |

8. Wood Shop Division—

| | | | |
|---------------------------------------|--------|-------------|-------------|
| Labor | 398.50 | | |
| Supplies—Lumber, Paint, etc. | 491.29 | | |
| Repairs, Replacement Tools, etc. | 290.42 | \$ 1,180.21 | \$ 1,115.00 |

9. Salaries—Professors and Assits.

33,566.63 34,020.00

\$ 44,781.85

Excess of Appropriations over Expenditures 1,414.15

\$ 46,196.00 \$ 46,196.00

E—Military Department—

1. Office and Unclassified Division—

| | |
|--------------------------------|--------|
| Postage, Stationery, etc. | 407.90 |
| Military Supplies | 199.88 |

| | | | |
|--|-----------|--------------|--------------|
| Upkeep of Band | 98.16 | | |
| Cadet Officers Sabres | 195.05 | | |
| Loss of Federal Property | 12.75 | | |
| Cadet Officers Insignia | 219.25 | | |
| Unpaid Bills, 1920-1921..... | 22.75 | | |
| Band Instruments | 97.51 | | |
| Officers Equipment | 15.78—\$ | 1,269.03 | \$ 1,979.65 |
| 2. Salaries—Commandant and Assts.. | | 5,272.30 | 5,450.00 |
| | | <hr/> | <hr/> |
| | | \$ 6,541.33 | |
| Excess of Appropriations over Expenditures | | 888.32 | |
| | | <hr/> | <hr/> |
| | | \$ 7,429.65 | \$ 7,429.65 |
| F—Textile Department— | | <hr/> | <hr/> |
| 1. Carding and Spinning Division— | | | |
| Cotton for Class Use..... | \$339.95 | | |
| Repairs and Supplies | 168.16 | | |
| Material for Cotton Grading | 47.96 | | |
| Safety First Outfit..... | 25.00—\$ | 581.07 | \$ 1,005.00 |
| | <hr/> | | |
| 2. Dyeing Division— | | | |
| Chemicals and Dye Stuffs..... | 198.94 | | |
| Glassware and Material | 166.47 | | |
| Misc. Small Apparatus | 143.53—\$ | 508.94 | \$ 525.00 |
| | <hr/> | | |
| 3. Office and Unclassified Division— | | | |
| Janitor and Engineer | 833.80 | | |
| Gasoline | 76.84 | | |
| Stationery and Postage | 38.24 | | |
| Student Labor | 74.60 | | |
| Mill Boy Helper | 300.00 | | |
| Textile Periodicals | 83.55 | | |
| Freight on Donated Machinery | 9.94—\$ | 1,416.97 | \$ 1,490.00 |
| | <hr/> | | |
| 4. Weaving Division— | | | |
| Warps and Filling Yarn | 550.86 | | |
| Loom Supplies and Repairs | 116.32 | | |
| Knitting Yarn and Samples | 42.86 | | |
| Card Cutting Machine | 92.07 | | |
| Chairs and Tables | 62.75 | | |
| Tools, Pulley, etc. | 47.81—\$ | 912.67 | \$ 1,420.00 |
| | <hr/> | | |
| 5. Salaries—Professors and Assts. | | 10,349.90 | 10,300.00 |
| | | <hr/> | <hr/> |
| | | \$13,769.55 | |
| Excess of Appropriations over expenditures | | 970.45 | |
| | | <hr/> | <hr/> |
| | | \$ 14,740.00 | \$ 14,740.00 |
| | | <hr/> | <hr/> |

G—Public Utilities Department—**1. Campus Division—**

| | | | |
|---|-----------|----------|-------------|
| Salary of Foreman ($1\frac{1}{2}$)..... | \$ 605.00 | | |
| Labor | 1,395.91 | | |
| Fertilizer | 348.53 | | |
| Seed, Plants and Trees | 199.70 | | |
| Feed and Upkeep of Two Mules.... | 399.40 | | |
| Tools, Machinery and Repairs..... | 149.55 | | |
| Development Expt. Station Road | 418.87 | | |
| Develop't opposite Barracks No. 2 | 364.81 | | ---- |
| Cement Sidewalks, etc..... | 993.16—\$ | 4,874.93 | \$ 5,169.50 |

2. Construction and Repair Division—

| | | | |
|-------------------------------------|-------------|-----------|--------------|
| Post Office Equipment | \$4,499.53 | | |
| Office Supplies, Postage, etc..... | 49.06 | | |
| Repairs & Renewals of Apparatus | 15.29 | | |
| Tools and Implements | 25.15 | | |
| Gasoline Truck | 73.37 | | |
| Improvements & Repairs—Bldgs. | 1,164.14 | | |
| Repairs to Public Buildings | 4,496.73 | | |
| Repairs Residences 1921-1922 | 4,876.67 | | |
| Cement Floor—Barracks No. 1.... | 58.87 | | |
| Cement Floor—Kitchen Bar. No. 1 | 360.19 | | |
| Inside Steps Barracks No. 1 | 217.26 | | |
| Fumigating Room Cadet Hosp.... | 46.51 | | |
| Lattice—Cadet Hospital | 23.64 | | |
| Bath and Toilet Cadet Hospital... | 128.59 | | |
| Ten Grate Fronts, Hearths, Hosp. | 59.30 | | |
| Miscellaneous Items—Hospital | 126.90 | | |
| Adapting school house-residence.... | 489.55 | | |
| Lavatory in Toilet Y. M. C. A.... | 68.77 | | |
| Basement Room—Main Building | 881.50 | | |
| Converting Annex to Appt House | 2,014.47 | | |
| Garage for Truck | 70.45 | | |
| Ford Truck, Const. & Repair Div. | 615.38 | | |
| Chute for Garbage—River | 91.47 | | |
| Grate in Hunter Residence..... | 6.65 | | |
| Extension Crandall Rear Porch | 65.18 | | |
| Enlarging Room Marshall House | 237.90 | | |
| Toilet—Marshall House | 182.89 | | |
| Glass Doors—Marshall House..... | 29.00 | | |
| Salary Supt. Const. Rep. Div..... | 1,800.00 | | |
| Changes, etc., Engineering Dept. | 4,077.32—\$ | 26,851.73 | \$ 29,272.32 |

3. Farm Division—

| | | | |
|----------------------------------|----------|----------|-------------|
| Ditching in Clemson Bottoms | 1,557.38 | | |
| Dike—Lewis Bottoms | 201.48 | | |
| Repairs to Barn | 78.80—\$ | 1,837.66 | \$ 1,600.00 |

4. Heat, Light and Water Division—

| | | | |
|----------------------------------|-----------|--------------|--------------|
| Power Station Equipment | 5,502.84 | | |
| Labor | 6,807.05 | | |
| Materials, Repairs & Extensions | 1,905.04 | | |
| Coal | 14,773.68 | | |
| Repairs to Generator, etc. | 727.22 | | |
| Portable Chem. Fire Engine | 216.86 | | |
| Fire Hose and Apparatus | 250.00 | | |
| Lights, Water, etc., Herdsman's | | | |
| House | 192.49 | \$ 30,375.18 | \$ 50,824.76 |

5. Roads, Sidewalks and Hauling Division—

| | | | |
|-----------------------------------|------------|-------------|-------------|
| Labor—Truck Drivers, etc. | \$1,744.38 | | |
| Hire of Teams from Farm | 160.50 | | |
| Gasoline, Oil, Tires, and Repairs | 797.23 | | |
| Road Scrape, etc. | 520.00 | | |
| Salary of Superintendent | 1,500.00 | \$ 4,722.11 | \$ 5,625.00 |

6. Watchman and Police Division—

| | | | |
|--|--------|--------------|--------------|
| Salary—Watchman and Police | 807.50 | | |
| Supplies | 26.66 | 834.16 | 1,010.00 |
| | | \$ 69,495.77 | |
| Excess of Appropriations over Expenditures | | 24,005.81 | |
| | | \$ 93,501.58 | \$ 93,501.58 |

H—Miscellaneous Department—

1. Hospital Division—

| | | |
|--------------------------|-----------|-----------|
| Hospital Equipment | \$ 677.32 | \$ 677.57 |
|--------------------------|-----------|-----------|

2. Library Division—

| | | | |
|-----------------------------------|------------|-------------|-------------|
| Salaries | \$1,650.00 | | |
| Supplies, Cards, Stationery, etc. | 15.84 | | |
| Magazines | 273.25 |  | .... |
| Membership Dues | 27.50 | | |
| Books, | 1,000.05 | \$ 2,966.64 | \$ 5,050.00 |

3. President's Office—

| | | | |
|------------------------------------|-----------|--------------|--------------|
| Salaries | 15,892.10 | | |
| Students' Cards, Forms, etc..... | 695.35 | | |
| Stamps, Stationery, etc. | 989.56 | | |
| Traveling Fund | 646.40 | | |
| Janitor and Janitor's Supplies.... | 600.00 | \$ 18,823.41 | \$ 19,055.00 |

4. Telephone System—

| | | | |
|---------------------------------|--------|-----------|-----------|
| Upkeep of System | 148.68 | | |
| Labor—Operation and Repairs.... | 738.36 | \$ 887.04 | \$ 990.00 |

5. Miscellaneous Items Division—

| | | |
|-------------------------------------|-----------|------------------------------|
| Expenses of Trustees and Board of | | |
| Visitors | \$ 897.02 | |
| Insurance Sink Fund | 5,335.51 | |
| Contingent and Incidental Exp. | 2,478.16 | |
| Ministers | 2,403.85 | |
| Salary Y. M. C. A. Secretary..... | 500.00 | |
| College Catalogue | 673.50 | |
| Annual Report to Legislature | 2.30 | |
| Commencement Expenses | 376.43 | |
| Trustee Medals | 42.20 | |
| Oil Painting—Col. R. E. Bowen.... | 303.40 | |
| Membership National Association | 91.00 | |
| Examination Booklets | 279.11 | |
| Pension—J. B. Stevens | 300.00 | |
| Scavenger Service | 480.00 | |
| Boys Club Scholarship | 600.00 | |
| Live Stock Exhibits | 279.34 | |
| State Fair Exhibits | 345.68 | |
| Travel, etc., Leg. Committee | 443.25 | |
| Salary of Magistrates | 99.96 | |
| Contingent Salaries | 591.20 | |
| Contribution to Clemson College | | |
| High School | 2,750.00— | \$ 19,271.91 \$ 22,975.51 |

6. Treasurer's Office Division—

| | | | |
|---|------------|--------------|--------------|
| Salaries | \$4,746.63 | | |
| Student Cards, Books, etc. | 580.49 | | |
| Record Books, Postage Stamps,... | 774.30 | | |
| Emergency Assistance | 420.00 | | |
| Premium on Bonds | 75.00 | | |
| Voucher File | 66.35 | | |
| Auditing Assistance | 311.06— | \$ 6,973.83 | \$ 7,062.08 |
| | | \$ 49,600.15 | |
| Excess Appropriations over Expenditures | | 6,210.01 | |
| | | \$ 55,810.16 | \$ 55,810.16 |

SUMMARY OF COLLEGE FUND

(Expenditures vs. Appropriations by College Trustees)
(Fiscal Year Ended June 30, 1922)

Departmental Expenditures—

| | Trustees Appropriation, | Amount Expended, | Balance Unexpended |
|---|----------------------------|---------------------|-----------------------|
| Public State Work | | | |
| A—Scholarships and Advertising | \$20,000.00 | \$14,461.98 | \$ 5,538.02 |
| B—Fertilizer Inspection and Analysis | | | |
| Inspection | 11,570.00 | 10,298.32 | 1,271.68 |
| Anaylsis | 28,700.00 | 12,630.97 | 16,069.03 |
| | <hr/> | <hr/> | <hr/> |
| | \$60,270.00 | \$37,391.27 | \$22,878.73 |

Departmental Expenditures—

College Work

| | | | |
|-------------------------------------|--------------|--------------|--------------|
| A—Academic Department | \$ 36,935.00 | \$ 35,039.50 | \$ 1,895.50 |
| B—Agricultural Department | 61,963.34 | 54,431.64 | 7,531.70 |
| C—Chemical Department | 11,975.00 | 11,691.87 | 283.13 |
| D—Engineering Department | 46,196.00 | 44,781.85 | 1,414.15 |
| E—Military Department | 7,429.65 | 6,541.33 | 888.32 |
| F—Textile Department | 14,740.00 | 13,769.55 | 970.45 |
| G—Public Utilities Department | 93,501.58 | 69,495.77 | 24,005.81 |
| H—Miscellaneous Department | 55,810.16 | 49,600.15 | 6,210.01 |
| | <hr/> | <hr/> | <hr/> |
| | \$328,550.73 | \$285,351.66 | \$ 43,199.07 |
| | <hr/> | <hr/> | <hr/> |
| Total Public State Work | \$ 60,270.00 | \$ 37,391.27 | \$ 22,878.73 |
| Total College Work | 328,550.73 | 285,351.66 | 43,199.07 |
| | <hr/> | <hr/> | <hr/> |
| Total | \$388,820.73 | \$322,742.93 | \$ 66,077.80 |

Unapportioned Funds—

(Inc. in Statement of Cash Receipts)

| | | |
|----------------------------|-------------|--------------|
| Sundry Cash Receipts | \$ 5,425.07 | \$ 5,425.07 |
| | | <hr/> |
| | | \$ 71,502.87 |

| | |
|----------------------------------|-----------|
| Unexpended Balance June 30, 1922 | 71,502.87 |
|----------------------------------|-----------|

| | |
|--------------|--------------|
| <hr/> | <hr/> |
| \$394,245.80 | \$394,245.80 |
| <hr/> | <hr/> |

SPECIAL FUNDS

General Comments—

This section refers to a number of Special funds, including receipts from the Federal Government for research and experimental purposes; the sale of experiment farm products and other accounts not directly connected with the general College fund reported in the preceding sec-

tion. The following funds (as shown on pages 19-22) represent amounts appropriated by the United States Government, to wit:

Adams Fund,
Hatch Fund, and
Smith-Lever (Federal) Fund.

And the Farm Products fund is used for similar work. (See statement, page 25). On pages 21-24, also, the State funds provided for public work are given, as follows:

Smith-Lever (State) Fund,
and State Appropriation (Direct).

The direct State appropriation is disbursed through the office of Comptroller General of South Carolina, but the figures are reported to this office and carried on the Treasurer's books, as a matter of record.

The other funds referred to originate at the College, forming a part of the general accounting system which the Treasurer has, so cleverly worked out, and are classified as follows:

Revolving Fund,
Cadet Fund,
and Cadet Deposits.

These funds are used as indicated through the statements herewith, on pages 26-28, and the various transactions entering into the accounts are carried on the books of account in a thoroughly explanatory manner. The Cadet Deposit statement is merely a summary, covering the private banking business operated by the College for convenience of the cadet students.

GENERAL STATEMENT OF ADAMS FUND

(Fiscal Year ended June 30, 1922)

RECEIPTS

U. S. Treasury Warrants—

| | |
|------------------------|--------------|
| August 31, 1921 | \$3,750.00 |
| October 31, 1921 | 3,750.00 |
| January 31, 1922 | 3,750.00 |
| May 31, 1922 | 3,750.00 |
| | |
| Total | \$ 15,000.00 |

DISBURSEMENTS

Items—

| | | |
|--|-------------|--------------|
| *1. Salaries | \$10,643.80 | |
| *2. Labor | 2,174.12 | |
| 3. Postage and Stationery | 8.50 | |
| 4. Freight and Express | 15.83 | |
| 5. Heat, light, Water and Power | 274.60 | |
| 6. Chemicals and Laboratory Supplies | 195.71 | |
| 7. Seeds, Plants, etc. | 287.08 | |
| 8. Fertilizers | 259.56 | |
| 9. Library | 5.00 | |
| 10. Tools, Machinery and Appliances | 73.40 | |
| 11. Furniture and Fixtures | 3.11 | |
| 12. Scientific Apparatus and Specimens | 1,026.62 | |
| 13. Live Stock | 6.00 | |
| 14. Buildings and Land | 26.67 | |
| Total | | \$ 15,000.00 |

*Analysis of Personal Service Expense—

Salaries—

| | | |
|---|-------------|--------------|
| Directors and other Administrative Officers | \$ 1,388.32 | |
| Scientific Staff | 8,633.26 | |
| Assistants to Scientific Staff | 572.22 | \$ 10,643.80 |

Labor—

| | | |
|------------------------------------|-----------|--------------|
| Annual and Monthly Employees | \$ 888.09 | |
| Daily employees | 1,240.12 | |
| Hourly Employees | 45.91 | \$ 2,174.12 |
| Total | | \$ 12 817.92 |

GENERAL STATEMENT OF HATCH FUND

(Fiscal Year ended June 30, 1922)

RECEIPTS

U. S. Treasury Warrants—

| | | |
|------------------------|-------------|--------------|
| August 31, 1921 | \$ 3,750.00 | |
| October 31, 1921 | 3,750.00 | |
| January 31, 1922 | 3,750.00 | |
| May 31, 1922 | 3,750.00 | |
| Total | | \$ 15,000.00 |

DISBURSEMENTS

Items—

| | |
|--|---------------------|
| *1. Salaries | \$ 7,919.42 |
| *2. Labor | 2,636.74 |
| 3. Publications | 122.67 |
| 4. Postage and Stationery | 408.17 |
| 5. Freight and Express | 139.58 |
| 6. Heat, Light, Water and Power | 132.84 |
| 7. Chemicals and Laboratory Supplies | 178.97 |
| 8. Seeds, Plants, etc. | 536.62 |
| 9. Fertilizer | 603.93 |
| 10. Feeding Stuffs | 932.66 |
| 11. Library | 723.91 |
| 12. Tools, Machinery and Appliances..... | 353.69 |
| 13. Furniture and Fixtures | 170.90 |
| 14. Live Stock | 6.00 |
| 15. Traveling Expenses | 84.71 |
| 16. Building and Land | 49.19 |
| Total | <u>\$ 15,000.00</u> |

*Analysis of Personal Service Expense—

Salaries—

| | |
|--|----------------------|
| Director and other Administrative Officers and Clerks | \$ 4,439.04 |
| Scientific Staff | 3,480.38—\$ 7,919.42 |

Labor—

| | |
|------------------------------------|---------------------|
| Annual and Monthly Employees | \$ 154.50 |
| Daily Employees | 2,393.29 |
| Hourly Employees | 88.95—\$ 2,636.74 |
| Total | <u>\$ 10,556.16</u> |

GENERAL STATEMENT OF SMITH-LEVER FUNDS

(Fiscal Year ended June 30, 1922)

RECEIPTS

Appropriations—

| | |
|--|---------------------|
| U. S. Treasury Warrants | \$147,902.57 |
| State Warrants (S. C.) | 94,147.00 |
| County Funds Paid direct by Counties | 43,755.57 |
| Total to Account for | <u>\$285,805.14</u> |

Accounted for as follows—

| Item— | Expenditures (Vouchers) | Total | Federal Fund | State and County |
|----------------------------------|-------------------------|--------------|--------------|------------------|
| 1. Administration | | \$ 26,541.03 | \$ 10,785.86 | \$ 15,755.17 |
| 2. Printing and Distribution | | | | |
| Publications | 6,653.89 | | 3,484.28 | 3,169.61 |
| 3. County Agent Work | 96,992.79 | | 47,452.33 | 49,540.46 |
| 4. Home Dem. Specialists | 11,140.02 | | 11,140.02 | None |
| 5. Home Demonstration Work ... | 57,747.88 | | 23,573.62 | 34,174.26 |
| 6. Negro Demonstration Work.... | 5,892.16 | | 5,382.64 | 509.52 |
| 7. Live Stock | 11,906.51 | | 9,221.33 | 2,685.18 |
| 8. Dairy..... | 10,824.53 | | 4,655.13 | 6,169.40 |
| 9. Agronomy | 17,045.08 | | 9,459.94 | 7,585.14 |
| 10. Horticulture | 14,153.30 | | 7,211.40 | 6,941.90 |
| 11. Poultry | 3,095.39 | | 3,059.18 | 36.21 |
| 12. Marketing | 11,575.60 | | 5,311.64 | 6,263.96 |
| 13. Entomology | 4,775.24 | | 2,866.05 | 1,909.19 |
| 14. Botany, etc. | 600.00 | | 600.00 | None |
| 15. Boys Club Work | 6,143.86 | | 3,233.29 | 2,910.57 |
| 16. Cotton Marketing and Grading | 717.86 | | 465.86 | 252.00 |
| Total | | \$285,805.14 | \$147,902.57 | \$137,902.57 |

STATEMENT OF SMITH-LEVER FUNDS

(Fiscal Year ended June 30, 1922)

Revised Classification of Expenditures

Personal Service—

| | | |
|---|--------------|--------------|
| Salaries | \$218,247.00 | |
| Labor | 85.15 | \$218,332.15 |
| Traveling Expenses | | 50,092.32 |
| Printing and Distribution of Publications..... | | 6,103.89 |
| Postage, Telephone, Telegraph, Freight, etc. .. | | 3,043.07 |
| Library | | 111.39 |
| Stationery and Small Printing | | 838.17 |
| Supplies | | 1,754.14 |
| Contingent Expenses | | 1,094.02 |
| Scientific Apparatus and Specimens | | 113.35 |
| Tools, Machinery and Appliances | | 22.03 |
| Furniture and Fixtures | | 3,680.49 |
| Heat, Light, Water and Power | | 620.12 |
| Total | | \$285,805.14 |

STATEMENT OF STATE APPROPRIATIONS

(Appropriations paid through Comptroller General's Office)
(Fiscal Year ended June 30, 1922)

RECEIPTS

| | |
|---|---------------------|
| 1. Agricultural Research Work | \$ 49,083.73 |
| 2. Crop Pest and Disease Work | 9,832.97 |
| 3. Live Stock Sanitary Work | 51,430.06 |
| 4. Tick Eradication | 15,679.68 |
| 5. Slaughtering of Diseased Animals | 2,118.42 |
| Total | <u>\$128,144.86</u> |

DISBURSEMENTS

1. Agricultural Research Work—

Salaries—

| | |
|---|------------------------|
| Superintendents | \$ 8,315.00 |
| Foremen | 1,849.98 |
| Herdsmen | 2,736.00 |
| Others | 12,055.52—\$ 24,956.50 |
| Labor | 4,308.73 |
| Labor and Other Misc. Expenditures | 1,291.19 |
| Traveling Expenses | 2,669.85 |
| Seeds, Plants, Fertilizer, etc. | 6,349.44 |
| Underdraining and Clearing | 424.73 |
| Fencing Pastures, etc. | 932.27 |
| Feed | 68.25 |
| Silos and Cattle Barns | 2,891.51 |
| Chemical Work for State | 1,708.33 |
| Tools and Implements | 59.45 |
| Live Stock (two mules) | 662.28 |
| Machinery and Equipment | 1,234.07 |
| Care of Cattle and Building Pasture | 1,140.26 |
| Publication of Research | 386.87—\$ 49,083.73 |

2. Crop Pest and Disease Work—

Salaries—

| | |
|------------------------------|----------------------|
| Clerk and Stenographer | \$ 970.00 |
| Other Salaries | 6,266.72—\$ 7,236.72 |
| Labor | 200.00 |
| Traveling Expense | 1,639.18 |
| Office Supplies, etc. | 757.07—\$ 9,832.97 |

3. Tick Eradication—

| | |
|--------------------------------|-----------------------|
| Salaries and Inspections | \$ 11,591.32 |
| Traveling Expenses | 504.67 |
| Supplies | 3,583.69—\$ 15,679.68 |

4. Live Stock Sanitary Work—

Salaries—

Veterinarians (12)\$ 26,669.19

Asst. to Veterinarians 11,155.97—\$ 37,825.16

Traveling Expenses 6,046.24

Misc. Supplies and Expenses 948.86

Disinfectants, etc. 5,404.57

Office Equipment 171.10

Other Equipment 1,034.13—\$ 51,430.06

5. Slaughtering of Diseased Live Stock—

Reimbursement for slaughtered animals.... 2,118.42

Total Expenditures\$128,144.86

GENERAL STATEMENT OF FARM PRODUCTS ACCOUNT

(Sale of Farm Products—Fiscal Year ended June 30, 1922)

RECEIPTS**Sales—**

Farm Products sold July 1, 1921 to June 30, 1922\$ 4,182.29

DISBURSEMENTS**Item—**

| | |
|---|--------------------|
| 1. Salaries | \$ 379.92 |
| 2. Labor | 353.24 |
| 3. Publications | 323.36 |
| 4. Postage and Stationery | 163.87 |
| 5. Freight and Express | 63.98 |
| 6. Chemical and Laboratory Supplies | 16.72 |
| 7. Seed, Plants, etc. | 223.27 |
| 8. Feed | 32.00 |
| 9. Library | 25.79 |
| 10. Tools, Machinery and Appliances | 10.24 |
| 11. Traveling Expense | 206.71 |
| 12. Contingent | 5.00 |
| 13. Buildings and Land | 533.83—\$ 2,342.93 |

Overdraft—July 1, 1921 421.85

\$ 2,764.78

Cash balance to account for June 30, 1922 (page 30) 1,417.51

\$ 4,182.29

REVOLVING FUND ACCOUNT

(Fiscal Year ended June 30, 1922)

| | |
|--|---------------------|
| Balance—July 1, 1921 | \$114,083.78 |
| Cash Received—July 1, 1921 to June 30, 1922— | |
| Total Receipts (as audited) | 281,334.13 |
| Total to account for | <u>\$395,417.91</u> |

Expenditures—July 1, 1921 to June 30, 1922—

Item—

| | |
|--|------------------------|
| 1. Animal Husbandry | \$ 5,661.79 |
| 2. Athletic Association | 7,810.71 |
| 3. Barracks—Fire Loss | 5,166.61 |
| 4. Cadet Exchange | 18,265.13 |
| 5. Coast Experiment Station | 495.60 |
| 6. Co-operating Cotton Testing | 1,060.19 |
| 7. Creamery | 19,856.29 |
| 8. Dairy | 10,956.09 |
| 9. Education of Disabled Soldiers | 12,938.35 |
| 10. Farm | 12,851.31 |
| 11. Hog Cholera Serum Work | 31,623.12 |
| 12. Hotel | 17,472.79 |
| 13. Insurance | 11,701.17 |
| 14. Lost Government Property | 20.02 |
| 15. Magistrates Fines | 302.05 |
| 16. Nursery Tags | 916.63 |
| 17. Pee Dee Experiment Station | 7,491.42 |
| 18. Poultry | 16.54 |
| 19. Receiving Account (Sundry sales, etc.) | 13,198.81 |
| 20. Rents | 9,852.27 |
| 21. Smith-Lever Interest Account | 1,690.21 |
| 22. Smith-Hughes Work | 24,564.11 |
| 23. Student Fees | 4,906.43 |
| 24. Student Loan Funds | 450.00 |
| 25. Veterinary Hospital | 2,237.48 |
| 26. Wood Shop | 1,052.61 |
| 27. Miscellaneous | 12,884.96—\$235,442.69 |

| | |
|---|-----------|
| Building Sinking Fund (Transferred) | 51,940.93 |
| Reserve Fund (Transferred) | 77,209.35 |

\$364,592.97

| | |
|---|-----------|
| Cash Balance to account for June 30, 1922 | 30,824.94 |
|---|-----------|

\$395,417.91

GENERAL STATEMENT OF CADET FUND

(Fiscal Year ended June 30, 1922)

Balance July 1, 1921\$ 7,848.49

Receipts July 1, 1921 to June 30, 1922, Inc.—

| | |
|--------------------------------------|------------------------|
| 1. Activity Fees | \$ 7,732.14 |
| 2. Breakage | 2,875.87 |
| 3. Diplomas | 477.85 |
| 4. Hospital | 12,110.29 |
| 5. Incidentals | 6,999.54 |
| 6. Laundry | 14,650.58 |
| 7. Miscellaneous | 296.72 |
| 8. Room, Heat, Light and Water | 16,070.70 |
| 9. Subsistence | 153,769.62 |
| 10. Uniforms | 29,304.37—\$244,287.68 |
| Total | <u>\$252,136.17</u> |

Disbursements July 1, 1921 to June 30, 1922, Inclusive—

| | |
|---|------------------------|
| 1. Activity Fees— | |
| 1. Athletic Association | \$ 2,992.76 |
| 2. Y. M. C. A. | 2,013.66 |
| 3. Tiger | 927.20 |
| 4. Chronicle | 899.13 |
| 5. Lyceum | 843.06 |
| 6. Refunds | 56.33—\$ 7,732.14 |
| 2. Breakage | 2,875.87 |
| 3. Diplomas | 471.95 |
| 4. Heat, Light and Water | 16,100.48 |
| 5. Hospital | 10,100.60 |
| 6. Incidentals (not otherwise classified) .. | 6,135.60 |
| 7. Laundry | 12,759.22 |
| 8. Laundry Building | 1,891.36 |
| 9. Miscellaneous Items | 3,197.19 |
| 10. Subsistence— | |
| 1. Provisions | 110,178.98 |
| 2. Supervision | 4,166.63 |
| 3. Labor | 21,221.62 |
| 4. Fuel | None |
| 5. Supplies | 1,907.12 |
| 6. Miscellaneous | 5,147.01 |
| 7. Refunds | 4,886.39 |
| 8. New Equipment | 522.42—\$148,030.17 |
| 11. Uniforms | 29,387.58—\$238,682.16 |
| Cash Balance June 30, 1922 | 13,454.01 |

\$252,136.17

CADET DEPOSIT ACCOUNT

(Banking Division Maintained for Convenience of Students)

(Fiscal Year ended June 30, 1922)

DEBIT

| | |
|--|--------------|
| Balance on hand July 1, 1921 | \$ 392.10 |
| Funds received July 1, 1921 to June 30, 1922— | |
| Total amount deposited by students and others \$65,976.35— | \$ 66,368.45 |
| Overdraft June 30, 1922 | 73.22 |
| | <hr/> |
| | \$66,441.67 |

CREDIT

| | |
|--------------------------------------|--------------|
| July 1, 1921 to June 30, 1922— | |
| Total checks paid | \$66,441.67 |
| | <hr/> |
| | \$ 66,441.67 |
| (July 1, 1922 to September 19, 1922) | |
| Total amount deposited | \$ 12,858.50 |
| Overdraft September 19, 1922 | 47.57 |
| | <hr/> |
| | \$ 12,906.07 |
| Checks paid | \$ 12,906.07 |
| Total | 12,906.07 |

CASH REPORT

Combined Statement—

On page 30, of this report, I present a combined statement of all funds, showing both receipts and disbursements for the period commencing July 1, 1921 and ending June 30, 1922. The cash balances are brought forward and are accounted for by the statement of cash in banks, on pages 31-32. A supplementary cash statement is submitted on page 33, showing receipts and disbursements, on account of all funds, from July 1, 1922 to September 7, 1922, close of business.

Cash Statements—

At the close of business September 7, 1922, I carefully counted the cash in the Treasurer's office and audited all items counted as cash—as indicated by the schedule on page 34. As statements from all banks were not available at that date (September 7, 1922) the bank accounts were not verified until later. However, a thorough audit, in this connection, was made at the close of business September 19, 1922, and the cash account was absolutely verified at this date (See statements, pages 35-37).

I beg to report, in conclusion, that all funds of record have been accounted for in a highly satisfactory manner. The records indicate that

the cash on hand is balanced daily and that all bank accounts are absolutely reconciled on the last day of each month.

COMBINED STATEMENT ALL FUNDS

(Consolidated Report on all Funds, Year ended June 30, 1922)

Cash on Hand July 1, 1921 (Last audit)—

| | |
|----------------------|---------------------|
| Revolving Fund | \$114,083.78 |
| Cadet Fund | 7,848.49 |
| Cadet Deposits | 392.10—\$122,324.37 |

| | |
|--|---------------------|
| Less: S. C. Experiment Station Overdraft | 421.85—\$121,902.52 |
|--|---------------------|

Receipts—

College Account—

| | |
|--------------------------------|-------------------------|
| General Sources | \$204,194.34 |
| Reserve Fund (Transferred | 77,209.35 |
| State Loan | 112,842.11—\$394,245.80 |
| Hatch Fund | 15,000.00 |
| Adams Fund | 15,000.00 |
| Farm Products Account | 4,182.29 |
| Revolving Accounts | 281,334.13 |
| Cadet Funds | 244,287.68 |
| Cadet Deposits | 65,976.35 |

State Funds—Through Compt. General—

| | |
|---------------------------------|-----------------------|
| Agricultural Research Work | \$ 49,083.73 |
| Crop Pest and Disease Work.... | 9,832.97 |
| Live Stock Sanitary Work | 51,430.06 |
| Tick Eradication Work | 15,679.68 |
| Slaughtering Diseased Animals | 2,118.42—\$128,144.86 |

Smith-Lever Extension Fund—

| | |
|----------------------------------|---------------------------------------|
| State & Federal Appropriatn's | \$242,049.57 |
| County Funds paid by Co. Offic's | 43,755.57—\$285,805.14—\$1,433,976.25 |

| | |
|----------------------------|----------------|
| Total to account for | \$1,555,878.77 |
|----------------------------|----------------|

Account for as Follows (Vouchers audited)

Expenditures—

| | |
|---|---------------------------|
| College Account | \$322,742.93 |
| Hatch and Adams Funds | 30,000.00 |
| Farm Products Account | 2,342.93 |
| Smith-Lever Ext. Work (including Co. funds) | 285,805.14 |
| Revolving Funds | 364,592.97 |
| Cadet Funds | 238,682.16 |
| Cadet Checks Paid | 66,441.67 |
| State Appropriations—Compt. General | 128,144.86—\$1,438,752.66 |

Cash Balances—June 30, 1922 (See page 32)

| | |
|----------------------------|-----------------------|
| College Fund | \$ 71,502.87 |
| Cadet Fund | 13,454.01 |
| Re-Investment Fund | 30,824.94 |
| Farm Products Account..... | 1,417.51—\$117,199.33 |

Less

| | |
|----------------------------------|--------------------|
| Cadet Deposits Acct. (Overdraft) | 73.22—\$117,126.11 |
| | <hr/> |
| | \$1,555,878.77 |
| | <hr/> |

RECONCILIATION OF BANK ACCOUNTS

(Close of Business June 30, 1922)

| | Bank Certificate Balance | Treasurer's Balance |
|--|--------------------------------|------------------------|
| 1. National Bank of Newberry (Smith-Lever) | | |
| Balance as per Bank Certificate | \$ 10,000.00 | |
| Checks out | None | \$1 0,000.00 |
| | <hr/> | |
| 2. Union Savings Bank, Bennettsville (Smith-Lever) | | |
| Balance as per Bank Certificate | \$ 9,980.00 | |
| Checks out | None | 9,980.00 |
| | <hr/> | |
| 3. Farmers & Merchants Bank, Anderson | | |
| Balance as per Bank Certificate | \$ 17,500.00 | |
| Checks out | None | 17,500.00 |
| | <hr/> | |
| 4. National Bank of Sumter | | |
| Balance as per Bank Certificate | \$ 14,000.00 | |
| Checks out | 5,000.00 | 9,000.00 |
| | <hr/> | |
| 5. Bank of Pendleton (Time Deposit) | | |
| Balance as per Bank Certificate | \$ 5,000.00 | |
| Checks out | None | 5,000.00 |
| | <hr/> | |
| 6. Farmers Bank, Abbeville | | |
| Balance as per Bank Certificate | \$ 7,500.00 | |
| Checks out | None | 7,500.00 |
| | <hr/> | |
| 7. Commercial Bank, Greenwood | | |
| Balance as per Bank Certificate | \$ 6,000.00 | |
| Checks out | None | 6,000.00 |
| | <hr/> | |
| 8. National Bank of Abbeville | | |
| Balance as per Bank Certificate | \$ 6,000.00 | |
| Checks out | None | 6,000.00 |
| | <hr/> | |

| | | | |
|---|----|-----------|---------------------|
| 9. The Fort Hill Bank, Clemson College | | | |
| Balance as per Bank Certificate | \$ | 2,000.00 | |
| Checks out | | None | 2,000.00 |
| <hr/> | | | |
| 10. Peoples Savings Bank, Abbeville | | | |
| Balance as per Bank Certificate | \$ | 6,000.00 | |
| Checks out | | None | 6,000.00 |
| <hr/> | | | |
| 11. Bank of Greenwood | | | |
| Balances as per Bank Certificate | \$ | 6,000.00 | |
| Checks out | | None | 6,000.00 |
| <hr/> | | | |
| 12. Union Savings Bank, Bennettsville | | | |
| Balance as per Bank Certificate | \$ | 15,000.00 | |
| Checks out | | None | 15,000.00 |
| <hr/> | | | |
| 13. Palmetto National Bank | | | |
| Balance as per Bank Certificate | \$ | 10,000.00 | |
| Checks out | | None | 10,000.00 |
| <hr/> | | | |
| 14. Bank of Pendleton (College and Smith-Lever) | | | |
| Balance as per Bank Certificate | \$ | 43,100.80 | |
| Less Checks out June 30, 1922 (as audited) | | 35,881.47 | 7,219.33 |
| <hr/> | | | |
| Total Treasurer's Balance June 30, 1922 | | | <u>\$117,199.33</u> |

GENERAL CASH STATEMENT

(Combined Statement All Funds, September 7, 1922)

Receipts July 1, 1922 to September 7, 1922, inclusive—

| | |
|--|-------------|
| Morrill Fund | \$25,000.00 |
| Hatch Fund | 3,750.00 |
| Adams Fund | 3,750.00 |
| Re-Investment Fund—S. C. Exp. Station | 3,492.29 |
| Clemson Bequest | 1,756.18 |
| Land Scrip | 2,877.00 |
| Tuition | 3,630.00 |
| Smith-Lever Fund—Federal | 78,007.24 |
| Miscellaneous Petty Funds | 19,562.23 |
| Cadet Fund | 52,182.45 |
| Cadet Deposits | 9,202.00 |

\$203,209.39

Deduct—

| | |
|---|----------|
| Overdraft June 30, 1922 (See page 28) | \$ 73.22 |
|---|----------|

Deposits July 1, 1922 to Sept. 7, 1922, inclusive—

| | | | |
|---------------------------------|-------------|-----------|--------------|
| Morrill Fund | \$25,000.00 | | |
| Hatch Fund | 3,750.00 | | |
| Adams Fund | 3,750.00 | | |
| Re-Investment Fund | 3,151.29 | | |
| Clemson Bequest | 1,756.18 | | |
| Land Scrip | 2,877.00 | | |
| Smith-Lever Fund—Federal | 78,007.24 | | |
| Miscellaneous Petty Funds | 18,233.80 | | |
| Cadet Deposits | \$8,687.48 | | |
| Cadet Deposits | 73.22— | 8,614.26— | \$145,212.99 |

| | | | |
|---------------------------------------|--|--|--------------|
| Cash Balance September 7, 1922, close | | | \$ 57,996.40 |
|---------------------------------------|--|--|--------------|

Accounted for as follows—

| | | | |
|------------------------------------|--------------|--|--------------|
| Cash in Office (see page 34) | \$ 13,084.27 | | |
| Cash in Bank (see page 35) | 44,912.13 | | |
| Total | | | \$ 57,996.40 |

STATEMENT OF CASH IN OFFICE

Close of business September 7, 1922, as counted)

National Currency and Legal Tender—

| | | | |
|--------------------------------|-----------|-------------|--|
| One hundred dollar bills | \$ 100.00 | | |
| Fifty-dollar bills | 50.00 | | |
| Twenty-dollar bills | 1,220.00 | | |
| Ten-dollar bills | 2,490.00 | | |
| Five-dollar bills | 750.00 | | |
| One-dollar bills | 33.00— | \$ 4,643.00 | |

Silver and Minor Coin—

| | | | |
|----------------|---------|-----------|--|
| Quarters | \$ 6.00 | | |
| Dimes | 60.10 | | |
| Nickels | 35.05 | | |
| Coppers | 07— | \$ 101.22 | |

| | | |
|------------------------------|--|-------------|
| Actual Cash as Counted | | \$ 4,744.22 |
|------------------------------|--|-------------|

Checks for Deposit—

| | | | |
|--|-------------|-------------|-------------|
| Checks as audited included in Deposit prepared for Bank of Pendleton | \$ 2,894.85 | | |
| P. O. Money Orders as audited | 301.26— | \$ 3,196.11 | |
| | | | \$ 7,940.33 |

Other Items counted as Cash (as audited)—

| | | |
|---|-------------|---------------------|
| Approved Claims—Labor and Expenses | \$ 2,578.49 | |
| Refund to Students | 202.40 | |
| Sundry Advances to Traveling Expense, Employees, etc. | 2,363.05— | \$ 5,143.94 |
| Total Cash and Items counted as Cash..... | | <u>\$ 13,084.27</u> |

RECONCILIATION OF BANK ACCOUNT

(July 1, 1922 to September 19, 1922)

Bank of Pendleton—(Checking account)

| | |
|--|--------------|
| Overdraft as per Bank certificate June 30, 1922..... | \$ 31,882.97 |
| Checks out (as audited) June 3, 1922 | 817.41 |

| | |
|--|--------------|
| Overdraft—Treasurer's records June 30, 1922..... | \$ 32,700.38 |
|--|--------------|

Deposits—

| | |
|-----------------------------------|---------------------|
| July, 1922 | \$ 47,341.73 |
| August | 28,638.00 |
| September 1 to 7, inclusive | 52,362.83 |
| | <u>\$128,342.56</u> |

Checks Issued—

| | |
|-------------------------------|---------------------|
| July, 1922 | \$ 7,334.67 |
| August | 35,326.71 |
| September 1 to 7 | 8,058.67 |
| Error in June corrected | 10.00 |
| | <u>\$ 83,430.43</u> |

\$ 83,430.43**Treasurer's balance September 7, '22, (page 33) \$ 44,912.13****Add—Deposits**

| | |
|--|---------------------|
| September 7 to 19, 1922, inclusive | 22,233.97 |
| | <u>\$ 67,146.10</u> |

Checks Issued—

| | |
|--|----------|
| September 7 to 19, 1922, inclusive | 2,598.90 |
|--|----------|

| | |
|---|---------------------|
| Treasurer's balance September 19, 1922, close | <u>\$ 64,547.20</u> |
|---|---------------------|

| | |
|---|--------------|
| Balance as per Bank certificate September 19, 1922..... | \$ 65,638.39 |
|---|--------------|

| | |
|------------------|------|
| Check Lost | 2.00 |
|------------------|------|

\$ 65,640.39

Less—Checks outstanding—

| | |
|---------------|-------------------|
| No. 581 | \$14.50 |
| 1341 | 3.94 |
| 1398 | 1.31 |
| 1446 | 3.94 |
| 327 | 8.25 |
| 908 | 10.00 |
| 533 | 22.50 |
| 562 | 43.00 |
| 563 | 52.37 |
| 564 | 106.00 |
| 565 | 60.37 |
| 579 | 59.37 |
| 580 | 62.37 |
| 581 | 50.37 |
| 583 | 53.19 |
| 585 | 32.70 |
| 586 | 123.80 |
| 587 | 47.19 |
| 588 | 321.45 |
| 593 | 16.57—\$ 1,093.19 |

| | |
|--|--------------|
| Treasurer's balance September 19, 1922 | \$ 64,547.20 |
|--|--------------|

GENERAL CASH STATEMENT

July 1, 1922 to September 19, 1922)

| | |
|---|--------------|
| Cash Balance July 1, 1922 (See page 30) | \$117,126.11 |
|---|--------------|

Receipts—

| | |
|----------------------------------|------------------------|
| Cadet Fund and Tuition | \$ 59,536.64 |
| Morrill Fund | 25,000.00 |
| Landscap | 2,877.00 |
| Clemson Bequest | 1,756.18 |
| Adams Fund | 3,750.00 |
| Hatch Fund | 3,750.00 |
| Farm Products | 4,047.16 |
| Re-Investment Fund | 33,041.96 |
| | <hr/> |
| | \$133,758.94 |
| Smith-Lever Fund (State) | 110,862.85 |
| Smith-Lever Fund (Federal) | 78,007.24—\$322,629.03 |
| | <hr/> |
| | \$439,755.14 |

Deduct—Disbursements—

| | | |
|--|--------------|--------------|
| Re-Investment Fund | \$ 36,858.85 | |
| College and Cadet Funds | 98,087.32 | |
| Adams Fund | 2,069.56 | |
| Hatch Fund | 2,082.64 | |
| Farm Products Account | 3,677.51 | |
| | <hr/> | |
| | \$142,775.88 | |
| Smith-Lever Fund | 44,877.58 | \$187,653.46 |
| | <hr/> | |
| | | \$252,101.68 |
| Cadet Deposit Account— | | |
| Checks Paid | \$ 12,906.07 | |
| Less—Deposits | 12,858.50 | \$ 47.57 |
| | <hr/> | |
| | | \$252,054.11 |
| Add—Miscellaneous Cash | | 20.00 |
| | | <hr/> |
| Net Cash to account for September 19, 1922 | | \$252,074.11 |
| | | <hr/> |

Accounted for as follows—

| | |
|--|--------------|
| Bank of Pendleton (Combined Accounts) Net balance..... | \$ 2,651.34 |
| Other Cash in Banks (see schedule, page 37) | 238,850.09 |
| *Cash in Office | 10,572.68 |
| | <hr/> |
| Total | \$252,074.11 |
| | <hr/> |

*NOTE—The cash in office was counted under date of September 7, 1922—but I have proved the balance shown above to the close of business September 19, 1922.

STATEMENT OF CASH IN BANKS

(Close of Business, September 19th, 1922)

Bank of Pendleton—(Checking accounts)

Net balance (as audited)\$ 2,651.34

Other Bank Accounts—(5 percent interest on daily average)

| | |
|--|--------------|
| Farmers & Merchants Bank, Anderson | \$ 17,500.00 |
| National Bank of Sumter | 9,000.00 |
| Farmers Bank, Abbeville | 2,500.00 |
| Peoples Savings Bank, Abbeville | 6,000.00 |
| National Bank of Abbeville | 1,000.00 |
| Union Savings Bank, Bennettsville | 15,000.00 |
| Bank of Greenwood | 6,000.00 |
| Fort Hill Bank, Clemson College | 2,000.00 |
| Commercial Bank, Greenwood | 6,000.00 |

| | | |
|---|--------------|--------------|
| Bank of Pendleton | 5,000.00 | |
| National Bank, Newberry (Smith-Lever) | 40,000.00 | |
| Union Savings Bank (Smith-Lever) | 9,980.00 | |
| Palmetto National Bank (Smith-Lever) | 118,870.09 | |
| | <hr/> | |
| | \$238,850.09 | |
| Checks out | None | \$238,850.09 |
| | <hr/> | <hr/> |
| Total | | \$241,501.43 |
| | | <hr/> |

SUMMARY

| | |
|---|--------------|
| Bank of Pendleton (as audited) | \$ 2,651.34 |
| Other Banks | 238,850.09 |
| | <hr/> |
| | \$241,501.43 |
| Cash in office (account verified) | 10,572.68 |
| | <hr/> |
| Total | \$252,074.11 |

REPORT OF THE BOARD OF VISITORS

1922

The Board of Visitors for 1922 assembled at Clemson College at 2:30 P. M., May 3, and were quartered in the trustees' house by the president, where they enjoyed a generous hospitality and every comfort during their sojourn, which ended about 4 P. M. the next day. Present were C. H. Seigler of Aiken, Second Congressional District; S. J. Derrick, of Newberry, Third; A. F. McKissick, Greenville, Fourth; J. Lyles Glenn, Chester, Fifth; J. S. Thompson, Dillon, Sixth; and W. W. Ball, Columbia, seventh. Robert Lanthan, of Charleston, appointed from the First District was unavoidably absent. The board organized by electing A. F. McKissick Chairman and W. W. Ball Secretary. Mr. Derrick, President of Newberry College, was chosen by the board to deliver a ten minute address to the students at chapel Thursday morning, a duty which he performed with excellent grace and pith.

General Statement—

Beginning at 3 P. M. and continuing throughout the afternoon and the next morning, the board inspected the various departments of the college under the guidance of their respective directors and professors. In the evening the president described to the board assembled in his office the operations of the college, sketching the founding of it and illustrating the narrative with lantern slide pictures. Thus an admirably comprehensive notion of the institution was derived.

Clemson has a picturesque site on the high hills rising from the Seneca river and commanding a view of the Blue Ridge a score of miles distant. The gentle slopes and glades covered with green grass, with long vistas opening through the trees of the original forest and numerous ornamental trees and shrubs, making a setting ideal for the houses where young men have their homes in the period that they are trained for their life's work and their characters are developed.

The Cadet Corps—

Short as their visit was, your board had opportunity to observe the manly and courteous demeanor of the 800 and more cadets. They appeared a robust, cheerful and earnest body of young South Carolina youth intent upon their tasks, proud of their institution and having a fine spirit as a corps. This conclusion was stronger upon the board when they dined with the cadets in the messhall on the second day as the guests of a committee, no members of the faculty being present. The food was wholesome, bountiful, well cooked and well served, and the great dining room was a pattern of neatness, order and good fellowship. The kitchens, pantries and refrigerating rooms were alike all that could be desired. The board inspected barrack rooms of cadets and their appurtenances, all of which were in good condition.

The Military Government of the Students—

Your board was in some measure surprised to observe the thoroughness of the military government and discipline. The corps is under the command of Colonel Pearson, four captains and one lieutenant, of the United States army, and cadet officers. The board has pleasure in dispelling, so far as it may an impression too prevalent that Clemson is half-baked as a military college and in commending it as a soldiers' school. It believes that the usefulness of a college of the type of Clemson is enhanced by the emphasis placed upon military discipline and hopes it will not be diminished. That the school is ranked by the war department as one of the four distinguished military colleges in this district of the United States will be readily understood even by those who casually survey it at work.

Records—

Financial administration of the institution is more than excellent. The methods were explained to the board in great detail and the members saw that a model of accuracy and comprehensive efficiency in bookkeeping has been arrived at. In addition to an elaborate and exact system of checking and counter-checking that seemingly would promote the highest degree of economy while preventing waste, extravagance and dishonesty in expenditures, an interesting and valuable record of the performance of the cadets is carefully kept. The composite report of all the professors and instructors of the conduct and scholarship of each cadet make an index of his character. Thus, when an employer is seeking an expert the college is enabled to report with remarkable precision upon the qualifications of any graduate or student under consideration, this report being the resultant of the recorded observations of a large number of the faculty and officers.

Financial Support—

Clemson College has depended in the main for the support of its collegiate activities as well as for the building and extension of its plant upon the fertilizer tag tax. The last two years, on account of the boll weevil infestation and agricultural depression, these revenues have been more than cut in half and loans from the state's sinking fund, authorized by the legislature, have been the resort. No early increase in the revenues from fertilizer inspection is in prospect, and the question of future support of the college presses for answer. Two courses are open. The one is that inspection revenues be covered into the state treasury and that the college be supported by direct appropriation. The second is that the college receives as heretofore the inspection revenues and that the legislature directly appropriate an additional sum that will provide for its comfortable maintenance. The legislature would determine the minimum amount of money that the college will need for a year and guarantee that it receives the difference between the total of inspection and other revenues and that amount. The Board advises the adoption of this second course. It would be for

the legislature to say in what degree it should control the manner of expenditure, whether of the inspection revenues or of the direct appropriation.

Live Stock—

The board find improvement in the quality of the livestock. A former board of visitors criticized the presence of grade animals. These have been practically eliminated.

Need of Gymnasium—

While the college has an admirable Y. M. C. A. building equipped with a fine swimming pool, it needs a gymnasium. The athletic fields are all that could be wished, but the want of facilities for indoor physical training is plain.

Hospital Facilities:

The hospital is a frame building, airy, clean and attractive. The general health conditions at Clemson being decidedly better than in the average institution, it with its limited number of beds, is sufficient to meet ordinary demands but a much larger and more substantial house with operating rooms and other conveniences should be erected. Were a serious disease epidemic in the college the accommodations now existent would be inadequate. No difficulty would be had in utilizing the present building for other purposes.

Hard Surfaced Roads—

The value of the property to the state would be enhanced were hard-surfaced roads constructed. A beginning of this work should be made at once and in the next two or three years at least two miles of such road should be built, so that communication between the departments of the college would be easy. A spacious campus of striking natural beauty, cared for with diligence and good taste as it is, should no longer be deprived of the added attractiveness which a comparatively small outlay on roadways would give to it.

Forestry Oversight Needed—

The time has come when the people of South Carolina can no longer afford to neglect their forests. The wealth of the state at small cost could be greatly augmented by reforestation of many areas of waste land and by conserving the woodlands that remain. Clemson should be the agency assigned to this important task and a department of forestry should be without delay included in the college and clothed with legal power needful to make its direction effective throughout the state.

GROWTH OF CLEMSON—

The number of cadets now in the college is above 800 and is as many as can be housed without crowding. It is believed that the attendance would enlarge to 1200 or 1500 were barracks available and in that

case the per capita cost of training and supporting cadets would be decreased. If it be true, as your board is convinced, that numbers of young men are knocking at the doors of Clemson and must be denied admission because the college is full to capacity, it seems to follow that in future the standards of admission will be automatically raised. Inevitably, preference will be given to youths who are best prepared for college work and those to whom the better secondary schools, usually found in the cities and larger towns, are open, will enjoy a marked advantage. If it is desirable that the college shall raise its standards and be a less popular institution, that result is promoted by the fact that the number of cadets is limited by the rooms available while the number of applications constantly increases. Your board is of opinion that, for the present, Clemson should expand horizontally, so to say, that it should take in and train every boy in the state who would have the training that it now offers, and for that reason it concludes that the **construction of more dormitories is an urgent need**. It is not a wise policy to allow the attendance to catch up with the housing facilities. The room for students always should be a little more than that for which there is insistent demand. South Carolina has not yet passed through the agricultural and industrial changes that have been going on the last 30 years, and Clemson should be liberally assisted in giving them direction. Technical education should be offered by the state to every boy who is ambitious to obtain it and on the lowest possible terms. Clemson has solved the problem of economical schooling and it will be the fault of the state if the school shall be closed to any of its youth who would share in it.

Branch Experiment Stations—

As a part of Clemson College work experimental stations are now conducted at Florence for the Pee Dee district, and at Drainland for the coastal region. They are centers of instruction in scientific farming and farm research for their respective sections. The college itself amply serves the Piedmont. To round out the system the state should purchase land and establish a similar station in the southwestern or lower Savannah river district. That part of the state is justly entitled to a station and its farmers will not have the treatment from the state that they deserve until it shall be provided.

EXPERIMENTAL FARMS—

Your board approaches its final recommendation with diffidence, if not doubt, and with some inkling of the difficulties of putting it into effect. Nevertheless, it hazards the suggestion that the college should carry on farms, either on lands at Clemson or on those at experimental stations, as units, with the object of discovering the financial results to be expected from farming in South Carolina. It seems to your board that it would be valuable were plots of ground set aside to be operated as complete farms, planted to a variety of crops, improved with gardens

orchards and the other features of a privately owned farm, that they be cultivated under the direction of the college and that their records be carefully kept, to the end that it be demonstrated whether they were profitable or not. It might be advisable to employ farmers to operate them under a profit-sharing contract. If methods and crops proved unprofitable one year, they could be changed the next, and if one experimental farm failed, another might succeed. Evidence should be at hand to prove approximately what is to be had out of farming in South Carolina, and though Clemson might not be able to furnish it in the single year, the effort to get it would be worth while if many years and some apparent loss of money were required. A mammoth hog is an impressive spectacle, but it does not always lead to a correct conclusion. What did it cost to raise the hog? Can the average farmer make a farm pay and if not, why not? While the cost of labor and other expenses might and would be greater to the college proceeding as a farmer, those disadvantages could be discounted in the reckoning and the college might have compensating advantages. At any rate, your board believes that it is within the province and it should be the duty of a state agricultural college to investigate the problem of the farm itself and to supply the evidence to the people of what they may look for from farming as a vocation. These unit farms would perhaps establish little or nothing in some years and their evidence often would be disappointing, but your board believes that in the long run the cumulative results would be of the highest value. Would two or three complete little farms conducted by Clemson with the aim that each be self-sustaining and profitable succeed? The only way to answer that question is to try out the farms and the cost of it should not be prohibitive.

Conclusion—

This report your board cannot submit without repeating and stressing that it is well aware that not everything can be learned about Clemson and agriculture in 24 hours. It hopes that it will not be understood as taking itself too seriously. At all events the suggestions are presented with the earnest wish that some of them may arouse thinking that will fruit in widening and enlarging the usefulness of a great institution.

Report of the Director of Experiment Station

To President W. M. Riggs,

Clemson College, S. C.

Dear Sir:

The period covered by this, the thirty-fifth annual report of the South Carolina Experiment Station for the fiscal year ending June 30, 1922, was one of change and uncertainty. Many of the changes taking place are fundamental in nature. The ravages of the boll weevil have now been felt over the entire state, and the changes brought about by this invasion are more or less permanent. In the sections invaded first the people have become more or less accustomed to his presence and have learned to grow other crops and have learned to grow some cotton under boll weevil conditions. In the state at large, however, the losses suffered from very unfavorable seasons and from the weevil combined have reduced the cotton crop to less than half a million bales, which is less than one-third of our maximum production of three years ago.

Under these conditions agricultural research assumes added importance. When our people turn to new crops or have new pests to fight, they naturally turn to the research workers for advice and assistance. Fortunately for our people, our research workers and a few of our progressive farmers have been experimenting with various crops, fruits and vegetables, looking to the substitution of these for cotton upon the arrival of the boll weevil, and our diversification program was already well worked out. Many money crops new to this state recommended by this experiment station and our extension service are now being grown to a large extent, especially in the eastern part of the state. As a result of this, fourteen thousand carloads of fruit and truck were shipped out of South Carolina this year to northern and eastern markets.

With the introduction of these new crops on a large scale and for intensive production, new problems have arisen for the research workers. We had, of course, anticipated some of the problems and had conducted fertilizer and variety studies as well as experiments to determine the best sections of the state for growing the different new crops. The insect pests and diseases of these crops could not be studied, however, until they were present and in many cases these pests have only recently developed to dangerous proportions. Soil fertility investigations and rotation studies with reference to these crops must be conducted on a large scale, and the pests which affect them must be kept out or controlled.

The boll weevil problem itself looms large from a research standpoint. We, of course, could not make progress investigating this insect and studying methods of its control until the insect had arrived and become more or less established. In the meantime, we had followed very closely the work of the United States Department of Agriculture along this line and have recommended the practices which they have found best in the states south of us. Now that the weevil is well established and behaving more or less normally in South Carolina, we have undertaken to investigate his habits and activities with a view of working out control measures suited to our conditions. The conditions are so different in the southeast from what they are in the central south, where all of the research work has been done on the boll weevil, that it seems very necessary that we conduct much fundamental research work with this pest. There is reason to hope for more effective control measures than have yet been worked out, if the Legislature will appropriate funds for such research work.

In our changing agriculture, livestock must play an increasingly important part. This station is devoting considerable attention to experimental work with hogs and dairy cattle, forage and pasture problems. Much fundamental investigation work is needed along these lines before our livestock production practices are on a solid foundation.

The members of our research staff have responded cheerfully to the many demands made upon them and have attacked the new problems confronting our agriculture with energy and zeal that will surely bring results. Satisfactory progress has been made with almost all of the lines of investigation under way. A short summary of the accomplishments along the several lines is given below, and a list of the problems now being investigated will be found at the end of this report.

EXPERIMENTS WITH CROPS

About sixty percent of the total value of the farm products in South Carolina is produced by ten of our principal field crops. This value in 1921 was \$120,000,000.00. Of this amount, more than half still comes from lint cotton. Our cotton production has probably reached its minimum, so we have every reason to expect that the larger share of our income will always be from what are termed our common field crops. Successful farming with us, therefore, is largely a matter of economic crop production.

There are many factors involved in economic crop production. The most important of these is the productive capacity of the soil as affected by crop rotations, soil building crops, winter cover crops, the judicious use of fertilizers, better terraces, and better drainage. Other important factors are more productive and better strains of crops and better tillage methods and cultural practices.

Probably, the most important factor in crop production at this time is the improvement of our soils to the point where cotton can be pro-

duced profitably under boll weevil conditions. It seems that poisoning the boll weevil will be a necessary practice in cotton production in the future. Research work along this line indicates that it is not profitable to poison the weevil and therefore not profitable to grow cotton under boll weevil conditions on land which without weevil injury would not make half a bale of cotton per acre. More than half of the land ordinarily planted in cotton in this state is too poor to grow cotton profitably under boll weevil conditions.

The factors influencing soil improvement and increased crop production are being investigated by the Research Department of Clemson College and by the experiment stations and our experiments have already demonstrated methods of soil building which increase the average yields per acre from seventy-five to one hundred percent. These experiments have also proved that the yields of our field crops can be increased from fifteen to fifty per cent by the use of the best seed of the better varieties, and have demonstrated cultural practices and methods of farm management which are leading to more profitable production.

EXPERIMENTS WITH FERTILIZERS.

Since South Carolina expends annually from twenty-five to fifty million dollars for fertilizers, it is but natural that the fertilizer problem should loom large before our farmers, and that the South Carolina Experiment Station should devote a large share of its energy towards determining the most judicious use of fertilizers. The practices now in vogue in this state are quite largely based on the results secured from our experiments during the past years. With our changing agriculture, however, our fertilizer practices are of necessity changing. Fertilizing cotton under boll weevil conditions is quite a different problem from growing and fertilizing this crop where the weevil is not present. Experiments conducted at our stations and on selected farms in different sections of the state indicate that the best crops of cotton were secured from a reasonable application of acid phosphate and ammonia, and from a well balanced complete fertilizer which does not run high in any one element. Nitrogen has increased earliness and yield when applied in quickly available form early in the season. During the past season side applications of nitrate of soda made as late as June 15 increased the yield.

New crops are assuming importance and their fertilizer needs must be studied. We have undertaken experiments with peaches, Irish potatoes, lettuce, and sweet potatoes in different sections of the state, and have long time tests under way, some of which are already yielding valuable data. With Irish potatoes for instance, organic nitrogen has given better yields than where the same amount of nitrogen was applied in inorganic form.

Cover crops and rotations when studied in connection with fertilizers are giving valuable data. In one instance we secured 40 bushels of

corn following corn and velvet beans, while the adjoining plot following cotton made with the same fertilizer only 15 bushels. Some of our experiments show that a good rotation increases the yield of cotton and corn as much as one thousand pounds of an 8-4-4 per acre. In a three-year rotation at the Pee Dee Station we have maintained the fertility of the soil for eight years without adding one pound of fertilizer. It is along these lines that we are now directing our experiments with the view of determining methods by which our fertilizer investment will yield the highest return.

EXPERIMENTS WITH BEEF CATTLE AND HOGS.

While beef is the chief human food produced on three-fourths of the total land area of the United States, beef cattle are being produced on only sixteen per cent of the farms in South Carolina. In this respect this state ranks thirty-fifth in comparison with the other states of the Union.

We doubt if beef cattle can be produced profitably on our improved lands which are well adapted for the production of crops. There is, however, no question but that our waste lands, such as the cut over pine lands and the bottom lands along our streams, which overflow too frequently to make it profitable to cultivate them, can be utilized to a large extent in beef cattle production. It is also evident that a great deal of the roughage, such as corn stover and rough hay produced on the average farm, can be utilized largely in wintering cattle where summer pastures are available. It is along these lines that our experiments in beef cattle production are being conducted.

At our Coast Experiment Station we are making very extensive tests with different methods of seeding cut over land to pasture grass, and are testing the value of different kinds of grasses and clovers in making pastures.

At Clemson we are making tests on our overflow lands along the Seneca River both in the production of hay and pasture, and are studying the relative economy of different concentrates in fattening beef cattle. In a test completed during this year we tested the comparative value of corn, rice meal and velvet beans when used with corn silage and cotton seed meal to balance the ration of beef cattle. The greatest gain per day (2.27 lbs.) was made with shelled corn and cotton seed meal, but the cost per hundred pounds gain was also greatest (\$13.57) in this case, and while the smallest gain (1.96 lbs.) per day was made with whole velvet beans as the sole concentrate, this gain was much cheaper (\$10.63) per hundred pounds than in the case of any other feed. These results were published in bulletin No. 214 of the South Carolina Experiment Station. During the coming winter tests will be made to determine the comparative value of different feeds in wintering beef cattle.

Pork production is one of the most profitable lines of livestock endeavor, and many farmers are turning to hog raising as a means of

adding to their income. There are at present more than a million hogs in South Carolina, and the number is gradually increasing as diversification becomes more general.

This experiment station has for several years conducted feeding tests with various combinations of different kinds of feed, and forage, and acting upon advice based upon such experiments, many farmers have changed from the dry lot feeding of hogs to the free use of forage crops, thereby saving at least one-third of the grain ration. They have also learned from these experiments to supplement corn with tankage and fish meal, in this way balancing the ration and producing more rapid and more economical gains.

At the Pee Dee Station in tests now under way, we are hogging off peanuts alone, peanuts plus 2 percent ration of corn, peanuts and sweet potatoes, sweet potatoes alone, sweet potatoes supplemented with tankage, corn alone, corn and tankage, corn and velvet beans, and corn and velvet beans grown together and supplemented with tankage. Preliminary results from these tests indicate that neither peanuts nor sweet potatoes are as profitable under present conditions when hogged off as when harvested and sold. Rape, soybeans, and rye have proved in our experiments to be good forage crops for hogs, one acre of soybeans in a recent test making 400 pounds of pork. Preliminary feeding tests with pigs already reported in our bulletin No. 213 show that the greatest gains were made with Red Dog Flour used as a supplement to corn and tankage, but the cheapest gains were made when wheat middlings were used as the supplement.

PLANT DISEASES.

The Botany Division continues to investigate various diseases of plants which are prevalent and destructive in this state. Fungus and bacterial diseases of plants take a much larger toll of our crops each year than is commonly realized. Last year the Plant Disease Survey's report of the United States Department of Agriculture compiled in co-operation with this office, showed that the loss caused by plant disease in South Carolina to the seven major field crops amounted to more than \$20,000,000.00. This is more than three times the total amount appropriated by our Legislature for all purposes, and four hundred times the amount appropriated for agricultural research. These destructive diseases of plants, like the diseases of animals and of man, yield readily to scientific treatment when the causes are known and the habits and behavior of the organisms which cause them are understood. As a result of the research work of this division, cotton anthracnose, a fungus boll rot of cotton, angular leaf spot and other bacterial diseases of cotton which formerly caused from three to five million dollars loss each year in South Carolina, have been eliminated from the majority of the fields of the state and their ravages greatly reduced throughout the entire south. Other destructive diseases are being

taken up an investigated in a similar way and control measures worked out as rapidly as our time and facilities permit.

Aside from the fundamental research work referred to above, this division maintains a plant disease survey of the state. In this way, the prevalence of the various diseases is determined each year, the data secured serving as a basis for planning campaigns for disease control. In this survey reports are made on 131 different diseases of crops, fruits and vegetables.

BACTERIAL CONTENT OF MILK

The associate bacteriologist of the station continues to study the bacterial content of milk with a view of determining the behavior and development of bacteria during the different periods of handling milk from the time it is milked until it reaches the consumer. The dairy-men of the South are concerned chiefly with the furnishing of whole milk to the nearby markets, and this project was undertaken with a view of determining practices and methods of handling milk which would keep down the bacterial content.

A careful study has been made of the so-called germicidal property of milk and the bacterial development during the first two to four hours after milking. The data secured this year agrees with results reported last year, and show that where the initial bacterial content of the milk is low there is no marked increase in the number of bacteria during the first four hours. The bacterial content of the milk from a number of individual cows has been determined and it is found that the milk from some cows contains a much larger number of bacteria than that from others. Results so far, indicate that the initial bacterial content of Holstein milk is lower than that from Jerseys. About forty different strains of bacteria have been isolated from milk from different cows included in the project and these are being studied.

From these studies thus far, it appears that the production of certified milk is largely a matter of sterile utensils, and cleanliness in milking and handling the milk.

EXPERIMENTS WITH DAIRY CATTLE.

When there is a crisis in the agricultural development of any section where the one crop system is followed, there is always a strong tendency towards diversification. In the South, especially during the past decade, whenever we have had a period of depression, our people have turned to livestock as an additional means of maintaining their income. This was true from 1914 to 1916, and is especially true since 1920. During the present period of depression, and with the prospect of cotton production permanently handicapped by the presence of the boll weevil, our people are naturally turning to dairying. It is well that this is true, because it is estimated that we are already sending \$4,000,000.00 annually out of the state for butter alone. Besides this,

we are spending additional millions for condensed milk, milk powder, and other manufactured dairy products which might be produced at home. We now have about 240,000 milk cows in South Carolina, and need about 220,000 more to meet the rural needs for milk and its products to say nothing of the needs of our towns and cities. Aside from this, the dairy cow produces a greater return upon the feed consumed than does any other animal.

This station is conducting experiments looking to the improvement of the dairy cattle of the state as well as to the better utilization of feeds which can be produced in the South. In our tests with different feeds we have found that sorghum silage is about as good as corn silage for milk cows, and is cheaper than corn; velvet beans is the cheapest concentrate we can feed to milk cows and produces no bad effect; lime when fed to dairy calves causes gain in weight and increased growth in height.

Our extensive breeding experiments testing the comparative value of line breeding and out crossing as methods of improving dairy cattle are still under way and are making progress. We now have eight promising daughters of our Jersey herd bull, Chromo's Sensation, all out of dams that have made good official records in our herd. We also have seven daughters of our Holstein herd sire, and all of these are from dams that have advanced registry records made while in our herd. It takes a long period of years to complete experiments of this kind, but the results should form the basis for definite advice to our people as to the best methods to follow in gradually building up our production from the present average of about 150 pounds of butter fat per cow to something like two or three times this amount. The average production of the 92 cows in the state that completed records under our supervision this year was 490 pounds of butter fat and 11,356 pounds of milk. One three-year old Holstein cow has completed an annual record exceeding 27,000 pounds of milk and 850 pounds of butter fat.

INSECT PESTS

Insect pests constitute an increasingly serious problem for the farmers of this state and for our people in general. The damage caused to individual crops by a single species of insect frequently amounts to millions of dollars in one season. We not only have the native pests to deal with, but insects new to our state are constantly coming from other states and countries. The Mexican bean beetle made its appearance in the western part of the state during the fall of 1921, and has invaded Oconee, Pickens, and Anderson counties. This insect attacks practically all of our beans and other legumes including cowpeas and soybeans, and unless we can devise better control methods than our neighboring states have been able to work out, this pest is going to be a serious menace to our agricultural progress.

In our fundamental research work with insects, we are endeavoring

to determine the influences of seasonal and climatic factors on insect activity and behavior. Records already secured along this line enable our entomologists to foretell with considerable accuracy the outbreaks of some of our most destructive pests, thereby enabling the farmers to institute preventive measures or to be prepared to apply control measures at the proper time. Efforts are being made to correlate recurring natural phenomena with important farm operations, in order to replace as far as possible all recommendations involving dates by some such natural phenomena as blooming period of various species of plants. It has been found that insects as well as plants vary a great deal in the dates that they begin activity in the spring. It seems that in these variations plant and animal activity are pretty closely correlated. Certain farm practices, like the time for planting different crops, are now based on the activity of vegetation such as the unfolding of the leaves of certain species of trees, the blooming of some of our conspicuous forest trees and shrubbery. It seems now that the recommendations as to the practices for preventing insect pests might be based upon such natural phenomena rather than fixed dates.

BOLL WEEVIL CONTROL.

The biggest outstanding problem in South Carolina today is the development of control measures which will enable us to produce cotton profitably under boll weevil conditions. The production of cotton in South Carolina has decreased from 1,600,000 bales in 1920 to about 500,000 bales in 1922, and this decrease, while partly due to weather conditions, is largely due to the boll weevil. The very existence of the chief money crop of the South is threatened, and unless satisfactory control measures can be devised so that we can produce cotton at a reasonable cost, other countries which are now learning to grow cotton will produce it cheaper than we can, and the United States will lose one of its principal sources of income. This pest has now practically covered the entire cotton belt, and the problem of controlling it confronts every section of the South.

The United States Bureau of Entomology has been at work on the boll weevil problem for 28 years, and fortunately for the states recently infested, has worked out many of the fundamental features relative to the weevil activities and reactions to different conditions. In planning our experimental work, we have attempted to profit by the large amount of research conducted by the Federal Bureau, and the other states and have undertaken to test out under our conditions the measures found most helpful in other sections.

During the season of 1922, it seemed to us that the most important thing for us to determine was whether or not calcium arsenate dust could be used with profit under South Carolina conditions, this being the control measure most strongly supported by scientific data and most generally advocated by other experiment stations and by the Federal Government. Our experience of 1921 convinced us that it was not at

all safe to conduct our investigations at one point, because the variation in weevil infestation and the occurrence of unfavorable weather conditions might interfere with the results in such a way as to make little progress possible during the entire season. We, therefore, selected five different points in the state where we conducted cooperative experimental work with farmers. In addition to this we conducted control experiments at our main station at Clemson, and at our sub-stations at Summerville and Florence, making eight places in all where these experiments were conducted. Accurate cost accounts were kept of the labor and materials used in these experiments and these compared with the increases obtained in yield of seed cotton. The gains of the dusted areas over the adjoining check which was not dusted varied from 579 pounds per acre at Darlington, and 498 pounds at Sumter, to 286 pounds at Clemson College and 185 pounds at the Pee Dee Station at Florence. Four applications were made at Florence, 5 applications at Clemson and at Sumter, and 8 applications at Darlington. The cost per application per acre varied from about 75 cents to \$1.06, and the profit from use of calcium arsenate dust varied at the different places from \$12.00 per acre to \$60.00 per acre.

From these carefully conducted experiments in the various sections of the state this year, it is shown as conclusively as one season's results can show that calcium arsenate dust can be used with profit in any section of South Carolina. These investigations will, of course, be continued with a view of testing the effectiveness of this method under varying seasonal conditions.

As our work has developed this year, we have become more and more convinced that additional fundamental investigations need to be conducted with the boll weevil in the eastern section of the cotton belt. Many of the biological studies made by other investigators have been made further south in the warmer and more humid sections, and we feel that these do not apply in all cases to our conditions. This seems to be especially true with reference to the fall of the year, when the weevil is preparing for hibernation, and with reference to the spring and early summer, when he is emerging from hibernation. The conditions at these seasons are so entirely different in South Carolina from what they are in Louisiana and Mississippi that it seems especially important that thorough and extensive studies be made of hibernation and emergence and the effect of different field practices on these activities so as to secure a basis for further control experiments. The farm practices in South Carolina are very different from those in Mississippi and Louisiana, and studies of many features bearing upon the economical production of cotton and the relation of these to boll weevil activities must be undertaken before we can base our control measures and our plans for future agricultural development upon definite scientific information. Plans are now under way for materially enlarging research work along this line in co-operation with the Federal Government, and support is being asked from the Legislature for this purpose.

EXPERIMENTS WITH FRUITS AND VEGETABLES.

The varied soil and climatic conditions of South Carolina permit the growth of a great variety of fruits and vegetables during practically all seasons of the year. Formerly little attention was paid this particular feature of our state except, perhaps, in the matter of home-grown fruits and vegetables for home consumption. With the advent of the boll weevil and the resulting change in our agricultural practices, however, our people are undertaking the production of fruits and vegetables on a commercial scale for profit. Large commercial peach orchards are being developed, especially in the sand hill region, and along the coast trucking is rapidly becoming an important industry, while in the Piedmont region apples are an important crop.

From time to time, the South Carolina Experiment Station has conducted tests of the principal fruits and vegetables to determine the best varieties for home use and for commercial plantings. We have tested, also, a great many different plants introduced from foreign countries by the Office of Seed and Plant Introduction, of the United States Department of Agriculture. In many cases where fruits and vegetables are being grown on a commercial scale, fertilizer tests have been made and cultural practices studied. Important breeding work is being done on the Lookout Mountain potato, and we are also conducting tests with potatoes comparing certified and noncertified seed and studying the effect of source of seed on yield. Cooperative tests conducted with growers in different counties in the eastern part of the state indicate that certified seed of Irish potatoes is much more profitable than the ordinary seed stock which the grower usually buys through the seed trade. In all cases in these experiments the certified seed came up to a better stand and produced larger yields than the non-certified seed. This advantage is of course due to the added vigor which is secured by careful selection and freedom from disease, the certified seed being inspected for these qualities by state and federal inspectors before they are permitted to go on the market as certified. A circular giving this information in detail is in process of preparation.

The cooperative fertilizer experiments with peaches, conducted in the different peach growing sections of the state, are yielding interesting and valuable results. The time of applying nitrogen to the bearing trees seems to influence the ripening of the fruit, the growth of the twigs, and the production of fruit buds for the next crop.

Spraying tests with a weak Bordeaux mixture ($2\frac{1}{2}$ -6-50) show that this spray will prevent the cherry leaf spot and insure a vigorous healthy growth of the best varieties of sour cherries and cause a crop of fruit buds to be produced every year.

THE CLEMSON COAST EXPERIMENT STATION

At the Coast Station located near Summerville on the cut-over pine lands of the lower Coastal Plain, we are conducting experiments look-

ing to the development of the two million or more acres of cut-over lands in South Carolina. Large areas of these lands are now unproductive and are producing no income for the owners or for the state. Experiments already conducted here in reclaiming these lands and utilizing them for agricultural purposes have produced results which have encouraged farmers to take up the reclaiming of some parts of this area.

Drainage is still a problem at this station which is located on land that is very flat, and is only 70 feet above sea level. Since our drainage system was repaired during 1920 and 1921 however, the careful records which have been kept on the 64 observation wells installed last year show that all of our under drains are functioning in a satisfactory manner. The wide shallow ditches which Mr. Riley constructed for taking care of the surface water, have proved very helpful since they serve to carry off the surface water and prevented this from soaking into the soil and passing out through the under drains. In this way, the water gets off more quickly and the under drainage system is not taxed to such a great extent. The Office of Drainage Investigation, of the United States Department of Agriculture has co-operated very closely with us in these drainage experiments, and has recently supplied us with additional drainage and meteorology instruments which have been installed for the purpose of securing additional data on the drainage system. About 20 acres of land cleared during the past year is now being under-drained and made ready for cultivation.

The forestry experiments which were started here eight years ago are developing satisfactorily. All species of pine which are being tested here are growing satisfactorily and much information has been secured relative to methods and time of seeding the different species. The natural reproduction studies indicate very clearly that the long leaf and lob lolly pines, so common in this section, seed themselves very abundantly where fires are kept out.

As pointed out in our last annual report, we believe that the cut-over lands of this section of the state can be used profitably in the production of beef cattle. Grazing tests which we have conducted, however, indicate that the native grasses will not stand close grazing, and will not carry a sufficient number of cattle to enable this industry to develop as it should. On the other hand, the carpet grass and Lespedeza, pastures which we are developing, are increasing the value of these lands for grazing to a marked extent. Our experiments with methods of seeding carpet grass and Lespedeza indicate that the best results can be secured by disking the land before the seed are sown. Lespedeza seems to take hold readily wherever the sod is broken so that the seedlings can get a hold, and carpet grass where given a chance takes hold readily and in the course of two years develops into a good sod. Some fertilizer tests conducted here indicate that small applications of nitrate of soda and acid phosphate hasten the development of pastures

on these poor lands very materially, and it looks now as if it is going to be profitable to use small amounts of fertilizer in getting these pastures started.

We are gradually building up a good herd of Aberdeen-Angus beef cattle for use in the experimental work at this station. We bought a splendid pure bred bull of this breed last year and the herd is increasing at a normal rate. We now have about 30 head of pure bred Angus, and about an equal number of grade cattle. These are run on carpet grass and Lespedeza pastures for about nine months in the year, and after running in the cultivated fields for about 30 days are put in the lot for the winter. We are using sorghum silage for wintering.

Good crops of both corn and cotton were produced on this station this season, and all the experiments with the field crops made satisfactory progress. In the cotton variety tests, Coker's Cleveland produced the best yield, followed very closely by Lightning Express and Dixie Triumph. The cotton in our variety tests, fertilizer tests, and rotation plots averaged about one-half bale per acre, which we consider very good for the heavy boll weevil infestation which we had. The cotton was dusted twice with calcium arsenate as a means of protection against the weevil. The spacing tests and the test with time and method of fertilizing cotton under boll weevil conditions are showing some interesting results. Close spacing seems to be the best, and the best results were obtained from side applications of fertilizer made on the 19th of June.

The location of this station near the center of the trucking district of the state makes it a desirable place for conducting some of our experiments with the principal truck crops. We have devoted particular attention this year to Irish potatoes and lettuce. Fertilizer tests with Irish potatoes showed good results could be secured with applications of a ton of 7-7-3. The organic sources of nitrate gave better results than the inorganic when applied to Irish potatoes. A very complete fertilizer test with lettuce was conducted at this station, but the results of the first year are not at all conclusive. We plan to enlarge this truck work to some extent, and have already approved projects for extensive experiments with onions and lettuce.

A hundred ton silo was erected at this station during the year, and the water tank and roofs of several of our buildings here were put in repair and painted. The fence bordering on the public highway was moved back 30 feet along the frontage of the station lands and the highway widened and improved by the State Highway Commission. Two mules were purchased to replace the two old ones that were no longer serviceable. Among the larger implements added to the equipment of the station were a manure spreader, an insilage cutter, and a small tractor. On the whole, very satisfactory progress is being made at this station, and we are getting equipped now for a larger amount of better experimental work than we have been able to do here in the past.

THE CLEMSON PEE DEE EXPERIMENT STATION

The Pee Dee Station is located in the heart of the Pee Dee section on the Atlantic Coastline Railway, and on the main highway between Florence and Darlington, about two miles from Florence. The soil is fine, sandy loam, and fairly uniform throughout. The land is level, which makes it well suited for experimental work. This station was started in 1913, and since that time has conducted a great many experiments with crops and fertilizers which have served to point the way towards a better agriculture for this section of the state. The work from the outset has been largely with field crops and fertilizers, because these were the most important problems of the Pee Dee section. Many new crops have, however, been tested and a large amount of experimental work has been conducted, looking to wider diversification and better methods of growing our most promising crops.

The experimental work at this station has been conducted very much along the same lines as reported last year. In the variety studies the highest yielding varieties are much the same as previously reported. With cotton, Mexican Big Boll produced the highest yield, followed closely by Lightning Express. In the corn variety test, the yields varied from 36.2 to 50.6 bushels per acre, the highest yielding varieties being Rogers' Garrick, Pee Dee No. 5, and Coker's Garrick. Out of the 44 varieties of sweet potatoes used in our variety tests, the Porto Rico, Nancy Hall, Southern Queen, Triumph, and Yellow Strausburger stand out as being among the best.

We are still continuing breeding work with corn, cotton, sweet potatoes, velvet beans, and peanuts, and are making progress along all of these lines. A strain of Cleveland cotton, which we have been working with for several years, is giving excellent results in our tests. The peanut breeding work is also making good progress, and our No. 5 corn continues to make high yields. A selection of velvet beans which Mr. Kyzer made several years ago, yielded last year at the rate of 80 bushels per acre. The most promising strains of these varieties are being increased and will be distributed among farmers for general use in the near future.

We are duplicating at this station a large amount of the experimental work with forage crops for hogs. The work previously referred to with peanuts, sweet potatoes, and velvet beans, is conducted here and the results are checking very closely with those obtained at other places.

We have concentrated a good bit of our boll weevil work at this station. Aside from the variety studies, fertilizing tests, distance tests, methods of fertilizing and rotation tests, and other experiments having indirect bearing on boll weevil control, we have devoted considerable attention during the season of 1922 to experiments with poisons. Mr. R. W. Moreland, formerly of the Delta Laboratory of the United States Department of Agriculture, was employed early in the summer and came to the Pee Dee Station and took charge of this work. The results

of these experiments were referred to in the chapter under boll weevil control. Detailed data are being prepared for publication on this subject. In speaking of this work, Mr. Currin, our very efficient Superintendent of this station, says; "from our viewpoint, dusting with calcium arsenate properly done, will control the weevil, and we feel that cotton can be grown regardless of unusual weather conditions, provided the proper machinery is made to apply calcium arsenate dust as it should be applied."

Soil fertility and fertilizer studies have been major lines of investigation at this station since its establishment in 1913. The results of many of these tests have been published and made available for general use. A detailed report of the results on 180 tenth-acre plots used for a general comparative test of fertilizer since 1913 was published this year as bulletin No. 209. We are now conducting special fertilizer tests with sweet potatoes, cotton grown under boll weevil conditions, tobacco, peanuts, oats, Irish potatoes and peaches. A 7-7-5 has given best results for Irish potatoes when applied at the rate of a ton per acre and 8-3-6 best results for sweet potatoes when applied at the rate of 600 lbs per acre. The Pee Dee Station seems to be the logical place to make headquarters for our research work with the boll weevil, and it seems to us that the co-operative project now being planned with the United States Bureau of Entomology should be located here in the center of the rich Pee Dee section of the state.

COST OF PRODUCTION STUDIES.

There has been a great deal of discussion within the past few years as to the cost of producing crops under different conditions. When a search is made in the agricultural literature, very little reliable information is found on this subject. Hoping to secure data that would be of value along this line, we have kept accurate records of all of the operations and costs involved in producing the crops in the different fields on the experiment station farms during the past two years. On the college farm alone, we have kept such detailed records on twenty fields growing 12 different crops, and much valuable data are being secured. These records include the man hours, horse hours, and tractor hours needed for each operation, as well as the actual cost of seed, fertilizers, and miscellaneous supplies. Record is also kept of the number of days each mule works during the year, so as to arrive at the cost of horse-power.

During the fall of 1921, and again in the summer of 1922, Mr. W. C. Jensen, of the Agronomy Division, has conducted farm surveys in different sections of the state collecting data on cost of production. Much valuable information has in this way been secured with reference to the practices in vogue and the comparative cost of producing the different crops in different sections of the state. As a means of enlarging this line of work at the last annual meeting of the Board of Trustees, in July, the position of assistant in farm economics was estab-

lished with the view of securing a trained man to continue the research work in farm management and rural economics. The United States Department of Agriculture is co-operating with us in the undertaking, and will pay half of the salary and expenses of this position. This is one of the most important lines of work we have undertaken in recent years, and we are expecting very beneficial results from it.

LIBRARY.

A complete agricultural library is a very necessary adjunct to any organization for agricultural research. Fundamental research can be conducted satisfactorily only when the workers have ready access to all of the published information on any problem that engages their attention. This is the third year that we have had a trained librarian engaged in classifying and cataloging the large amount of valuable material which we have accumulated during the past 30 years. Practically all of this material is now available for use by our workers, and this has added greatly to the efficiency of the entire staff.

The librarian's annual report shows books accessioned and made ready for the shelves 758, volumes bound 172; volumes in temporary binders, 250, volumes collated for binding 172. The above does not include the routine work of checking and making accessible 1487 copies of bulletins and 3607 copies of agricultural journals, besides 12,735 pieces of minor mail, consisting largely of circular material on agriculture.

With improved provisions for agricultural reading and reference work, the library is being used more and more by teachers, research workers, extension workers, and students. The librarian's report shows a total of 4996 "readers," 3700 of which were students, and 1296 of which were faculty. Those classified as "faculty" include, of course, teachers, research workers, and extension workers.

PUBLICATIONS.

With the changing conditions in our agriculture, there is a greatly increased and increasing demand for publications showing the results of experiment station research. Our station publications are therefore in greater demand and seem to be more highly appreciated than ever before, and the distribution of the publications of this fiscal year has been noticeably greater than in former years. The result has been a rapid decrease of our supplies, many numbers being completely exhausted.

The mailing list now contains more than 5000 names, mostly South Carolina farmers, and we are adding to this every day. The list is classified so that publications are issued only to those who have asked for the class of material to which a given publication belongs. In this way waste of publications is largely prevented. All publications are sent to every one who requests them.

Six publications were issued during the fiscal year as given below:

Bulletin 207, "Variety Tests With Corn."

Bulletin 208, "Analysis of Commercial Fertilizers."

Bulletin 209, "Fertilizer Experiments."

Bulletin 210, "Some Phases of Breeding Work and Seed Production of Irish Potatoes."

Bulletin 211, "Fertilizer Experiments with Cotton at Clemson College."

Thirty-fourth Annual Report for Year ended June 30, 1921.

Besides these regular publications a number of articles have been published in scientific journals and periodicals and many news articles have been prepared for the Weekly News Notes and the press of the state.

PROJECTS UNDER WAY

The following is a list of projects now under way in the Research Department:

Agronomy Division.

A study of the inheritance of barrenness in corn.

Inheritance in oats.

Effects of companion crops on corn.

Factors influencing oil content of cotton seed.

Effects of soil stirring on moisture, nitrification, yield, etc.

General fertilizer tests.

Comparative value of different legumes in rotations.

Comparative tests of sources of phosphorus.

Comparative tests of sources of nitrogen.

Comparative tests of sources of potash.

Tests of sources of ammonia for top-dressing cotton.

Tests of methods of applying fertilizers.

Tests of theoretically correct fertilizer formulas.

Cooperative fertilizer experiments, cotton, corn, oats, peas, etc. ,

Corn culture tests.

Cotton spacing and culture tests

Corn and cotton two-year rotation.

Breeding work with cotton (general).

Breeding cotton (Cooke).

Breeding peanuts.

Breeding barley.

Breeding wheat.

Breeding corn.

Sorghum variety tests.

Oat variety tests.

Cowpea variety tests.

Soybean variety tests.

Velvet bean variety tests.

Wheat variety tests.

Peanut variety tests.
Corn variety tests.
Cotton variety tests.

Animal Husbandry Division.

Comparison of forage crops in pork production.
Comparative tests of peanuts, sweet potatoes and corn for pork production.
A study of the effects of velvet beans on pregnant sows.
A comparison of protein feeds for pigs.
Cost of producing hogs.
Permanent pasture experiments.
Soft pork investigations.
Bur clover and Bermuda vs. dry lots for growing gilts.
Pig feeding experiments.
Cattle feeding experiments.
Horse and mule breeding experiments.
Value of different feeds in wintering cattle.

Botany Division.

Plant disease survey of South Carolina.
Cotton anthracnose investigations.
A study of cotton root diseases.
Bacterial diseases of cotton.
A study of the bacteriological content of milk.
Forestry plantings.

Dairy Division.

Economic concentrates to supplement cotton seed meal for dairy cows.
Corn silage vs. sorghum silage.
Cost of raising dairy calves.
Line-breeding and out-crossing as systems of breeding.
Line-breeding of Holsteins.
Advanced register testing of dairy cows.
Feeding mineral salts to cows and calves.
The value of velvet beans in the ration of dairy cows.

Entomology Division.

Cotton boll weevil control by dusting with calcium arsenate.
Temperature-moisture in relation to insect activity.
Cotton root louse studies.
The slender wireworm and its control.
Control of peach tree borers.
Factors affecting boll weevil hibernation.
South Carolina honey flows.
Winter packing of bees.
The value of aluminum honey comb.

Horticulture Division.

Nitrate of soda test on bearing peach trees.

Control of cherry leaf spot.

Fertilizer test on young and bearing peach trees.

Variety tests with apples and grapes.

Methods of pruning bunch grapes.

Test of sources of Irish potato seed.

Fertilizer tests of Irish potatoes.

Fertilizer tests of lettuce.

Comparison of certified and non-certified potato seed.

Breeding work on Lookout Mountain potatoes.

Sweet potato investigations.

Respectfully submitted,

H. W. Barre,

Director of Research.

Report of the Director of Extension

Dr. W. M. Riggs, President, Clemson Agricultural College,
Clemson College, South Carolina.

Dear Sir:

Following is our report of extension work for the fiscal year ending June 30, 1922.

The period of depression growing out of war conditions that came upon the people in the late spring of 1920 continued during the fiscal year of 1921-1922, and unfortunately, at the same time the presence of the boll weevil covering practically the entire state with exceedingly unfavorable weather conditions, has caused our people to produce the smallest cotton crop since 1901, when the state produced 730,000 bales as against 770,000 bales in 1921. It is interesting to note that in the former year farmers purchased 327,000 tons of fertilizer and the latter year 671,000 tons. Owing to the difference in price, it required 14 percent of the cotton crop to pay for fertilizer in 1901, and 34 percent in 1921. A great many of our people have faced and are facing financial ruin; however, it should be understood that many are financially ruined on account of over-investment in high priced lands and following an unwise leadership in holding cotton, for the man today who is in the best circumstances is the one who sold cotton after it had reached a reasonably profitable price and the one who did not make investments in high priced farm lands. This fact should be emphasized for it was not altogether the breaking down of our agricultural system that brought ruin and demoralization but the speculative spirit in human nature. Those who pursued the wise and prudent course weathered the storm and will readjust their affairs to present conditions, and ultimately will be more prosperous than at any time in the past.

This statement is made in the light of the tremendous advancement of agriculture within the State in the last quarter of a century. We have increased our yields per acre in South Carolina of all our staple crops over 85 percent. For instance, twenty years ago the average yield of corn per acre in South Carolina was 11 bushels, in 1920, 19 bushels; the average yield of cotton, 137 pounds of lint, in 1920, 247 pounds of lint; the average yield of oats was 13 bushels, in 1920, 24 bushels; the average yield of wheat was 5 bushels, in 1920, 12 bushels. These yields can be increased by 75 percent within the next decade for the principle of soil building with many leguminous crops was unknown twenty-five years ago and we were more or less ignorant as to the intelligent use of commercial fertilizers. Also, the agriculture of the state made progress in other ways too numerous to mention in this

brief space. During the period of inflation when cotton was selling at 40 cents per pound the Extension Service was more or less ignored by the people, but since the presence of the weevil and the period of deflation has set in, the demand for service has been greater than at any time in the history of the Extension Service. It is impossible to meet all the demands, but the efficient work performed by the Extension forces was reflected in the attitude of the members of the last Legislature when every county in the state except two made the necessary appropriation for county agent work, and there was no opposition to the state appropriation.

While the attitude of the public is more favorably disposed to the Extension Service than at any time since my connection with it, I am not unmindful of the fact that the failure this year of a crop from any cause can quickly bring about a sentiment on the part of the people to eliminate many governmental agencies, regardless of their services; however, the policy of wisdom is to so serve the people that they will feel the Extension Service is absolutely indispensable. To this end we are bending every energy. It is with great pleasure I can make the statement that the enthusiasm and interest and the general esprit de corp of the force has never been more earnest. It is a splendid body of young men.

2. The "High Spots" of the Year's Work.

The decline in the prices of farm products while necessary as a sequel to war-time prices, served to draw the attention of the farmers to one of the weakest links in agriculture—that is, the wasteful, unbusiness-like, system of marketing and distribution of farm crops. During the past year two successful campaigns for organization of cooperative marketing associations have been completed with a view to bringing about a more economical marketing of our tobacco and cotton crops. These campaigns were largely brought about and carried through the educational work and organizations, activities of the Extension Service and this work constitutes the most important and far-reaching single line of work which the Extension Service has engaged in during the year. The success of these campaigns brings to a conclusion definite pieces of work which the General Assembly of South Carolina by resolution directed the Extension Service to undertake.

Much work has been done in the way of instructing truck growers how to grade, pack and ship truck crops. A great many county organizations have been brought into existence for the purpose of promoting a profitable trucking industry. Eventually these local associations will be federated into a state association. In this connection, it is interesting to quote from a report from Mr. F. L. Harkey, our marketing agent, who visited Florida to secure, for temporary purposes, four additional men to demonstrate grading, standardizing and packing truck crops.

"I am writing you to say that we have been successful in putting across Cucumber Grading in South Carolina. Through our influence, around forty-five experienced grades were brought into this State

from the State of Florida to help put across the South Carolina Grades for cucumbers.

"We have stressed the idea of community grading from the very beginning and have told the growers that they could not put up a standard grade unless they would meet at a common packing shed. As a result practically all of the crop has been graded at packing sheds on the railroads. Some of these sheds have been built by the growers and others have been turned over to the growers by the railroads. The South Carolina Produce Association has built a large shed and has installed six grading belts and is grading at packing sheds at Meggetts and Yonges Island. The Blackville Cooperators Packing and Marketing Association has installed a large shed at Blackville and is employing a number of graders. Packing sheds have been turned over to the shippers at Bamberg, Olar, Denmark, Elko, Williston, Barnwell, Allendale, Kline, Dunbarton, Fairfax, Rowesville, Springfield, Orangeburg, Hilda and a number of other points that I cannot remember at present. Two of our marketing men and myself have been carrying on grading demonstrations at a dozen or more points not mentioned. Our work has been well received and is very much appreciated.

"An instance of what happened in Blackville is repeated below:

"Mr. W. A. Fickling, president of one of the Banks at Blackville, stated that by grading his first lot of cucumbers, which amounted to 104 hampers, that he made a net profit of \$30.00 over and above what he would have made if he had sold them on the street ungraded. In other words, he paid his interest in the packing shed which was \$25.00 out of his profit from the first sale and had \$5.00 left. Many examples of such could be given."

The sweet potato industry has been more thoroughly organized and definite policies for its development adopted and promulgated. A comprehensive bulletin on this subject has been published recently.

In Boys' Club Work the individual plan of conducting this work has been abandoned in favor of the community plan by which the boys have an organization of their own. They elect their own officers, hold meetings, carry through programs, etc., thus obtaining much better results in club work than heretofore.

In connection with the boll weevil invasion we had a campaign last fall to bring to the attention of the farmers the desirability of the fall plowing under of stalks, the sowing of soil-improving crops, etc. This campaign has been continued this spring to cover such factors as preparation, varieties, fertilizers, cultivation, etc. In addition to this, six poisoning demonstrations have been arranged and a specialist from the Department of Agriculture Laboratory at Tallulah, Louisiana, secured to supervise this work with a view to developing some reliable information regarding poisoning the boll weevil with calcium arsenate. Heretofore we have not had sufficient data under South Carolina conditions upon which to base a recommendation regarding poisoning.

The Extension Organization performs a service in advising to leave undone those things which should be left undone. This kind of service

is generally overlooked, notwithstanding thousands of dollars are saved the farmers and business men, as for instance, during the year a number of creamery organizations have postponed building and purchase of machinery following a survey and recommendations by dairy specialists. Grain elevators have been discouraged in several cases. The purchase of boll weevil traps has been pointed out as a waste of money. The construction of special patented sweet potato houses has been prevented and the standard plans which are not patented, adhered to, not only at a saving in price but at the same time giving better curing houses. We have discouraged the National Farm Bureau Federation from attempting to organize South Carolina this year on account of the state of mind of our people and the attitude they take toward organizations at the present. Also, we realized that for another farm organization to enter the field would bring on friction with the Cotton Association and might split our farmers into two camps. This, we believe, would be unfortunate.

The change in the organization of the Washington office has made advisable some changes in the methods within the state. We now require monthly reports instead of weekly and find the system in that respect much more satisfactory. The plan of districting the specialists to save railway expense and allow more time in the field, which plan was inaugurated during the year, seems, so far, to obtain the desired result. A further study and recommendation on this matter will be made later.

3. New Lines of Work Undertaken During the Year.

No new lines other than marketing and boll weevil work referred to above have been undertaken.

4. New Lines Contemplated During 1922-1923.

We have provided in the budget funds to employ a specialist in the growing and handling of tobacco, also one in the growing and handling of peanuts and soy beans. Under boll weevil conditions the tobacco crop in South Carolina must of necessity play a greater part in our agriculture than heretofore, especially in the Pee Dee section of the state, where tobacco has grown for the last twenty-years, but largely as a side issue, cotton being the main crop. For this reason we are not able to grow tobacco as successfully and as profitably as the farmers in Virginia and North Carolina as evidenced by the fact that North Carolina and Virginia averaged over 20 cents a pound for last year's crop and South Carolina a little over 6 cents. Peanuts and soy beans are beginning to attract considerable attention; the farmers in the Savannah Valley section of the state are especially interested in these crops, but as they have never been grown to any extent in the state, it is very necessary to secure a specialist who has a large knowledge of the practical growing of these crops. North Carolina is the largest producer of soy beans in the United States and doing so at a considerable profit. Soy beans should be encouraged in South Carolina.

PROJECT NO. 2.—PRINTING AND DISTRIBUTION OF PUBLICATIONS.

During the fiscal year six Extension bulletins, nine circulars and three information cards, and six posters have been published, 110 news letters and six columns of free plate matter have been furnished to the newspapers for publication. The Weekly News Notes has been issued each week for 52 weeks, and many special articles have been prepared for newspapers and farm journals circulating in South Carolina. The annual report for the calendar year 1922 will be published early in 1923.

The distribution of publications has been, as formerly, through regular mailing lists, through county agents and specialists, and through answers to individual requests for information. The distribution for the year averaged around 10,000 copies of publications per month, the highest being 16,301, in June, 1922.

PROJECT NO. 3.—COUNTY AGENTS

Any statistical report of results of County Agent work must necessarily be based on the crop for calendar year. The following results are taken from the County Agent's reports for the calendar year 1921:

County Organizations—

Number of community clubs organized, 56; membership, 1802;

Number of community clubs in counties, 160; membership, 7334.

Cooperative Buying and Selling—

Value of stuff bought and sold cooperatively, \$628,951.65.

Saved by buying and selling cooperatively, \$71,820.83.

Number of agents keeping bulletin boards, 11.

Number of agents using Market News Service, 30.

| Crops. | Dems. | Acreage | Average |
|---|-------|---------|-----------|
| No. of corn demonstrators | 827 | 13,159 | 40 bu. |
| No. of cotton demonstrators | 970 | 23,515 | 920 lbs. |
| No. of tobacco demonstrators | 68 | 450 | 828 lbs. |
| No. of tomato demonstrators | 41 | 80 | 140 bu. |
| No. of oats demonstrators | 538 | 7,348 | 40 bu. |
| No. of wheat demonstrators | 244 | 1,959 | 16 bu. |
| No. of rye demonstrators | 661 | 4,069 | 17 bu. |
| No. of Alfalfa demonstrators | 299 | 1,120 | 3.5 tons. |
| No. of vetch demonstrators | 370 | 2,520 | 2.3 tons. |
| No. of Crimson clover demonstrators | 721 | 4,670 | 1.7 tons. |
| No. of hay crop demonstrators | 271 | 2,214 | 2.4 tons. |
| No. of summer legume demonstrators | 1535 | 24,694 | |
| No. of Irish potato demonstrators | 148 | 832 | 102 bu. |
| No. of sweet potato demonstrators | 556 | 2,418 | 153 bu. |
| Totals | 7,249 | 89,048 | |

* Under hay crops in the above table are included Bur Clover, sweet clover, red clover, Dwarf Essex rape, Lespedeza, Soudan grass, sorghum, peas, Alsike, and peas broadcast.

Number of farmers agent has influenced to select seed for next year's crop, 1798. (corn).

Estimated amount of seed corn selected, 8160 bushels.

Number of farmers directly influenced to use better methods in growing corn, 4353.

Number of farmers induced to test corn for germination, 165.

Number of demonstrators who planted pure or selected cotton seed, 1296.

Acreage planted, 31,972.

Number of farmers induced to field select seed for next year's crop, 1687.

Number of farmers directly influenced to use better methods in growing cotton this year, 6381.

Number of farmers directly influenced to use better methods in growing tobacco this year, 125.

Number of bushels of seed treated for smut, rust, etc., oats, 14,615; wheat, 13,626; rye, (Altman) 400, (Baxter) 8, (Wood) 80.

Number of farmers directly influenced to use better methods in growing oats, 1878; wheat, 2589; rye, 1024.

Estimated total number of acres of crimson clover, oats, or rye, turned under by agent's advice.

Estimated increased acreage in Irish potatoes due to agent's work, 341.

Number of farmers directly influenced to use better methods in growing sweet potatoes this year, 2117.

| Orchards. | No. of orchards. | No. of trees. |
|---|------------------|----------------|
| Demonstration home orchards | 688 | 62,523 |
| Inspected | 1541 | 104,450 |
| Pruned, sprayed or treated for borers, due to agent's influence..... | 2600 | 160,224 |
| Planted due to agent's influence | 854 | 108,315 |
| Totals | 5683 | 435,512 |

Commercial orchards—agent assisted in caring for, 60.

| | |
|--------------------------------|--------|
| Agent personally sprayed | 25,340 |
| Pruned | 29,398 |
| Wormed | 9,091 |

Total 63,829

Horses—

Number of purebred stallions and jacks brought in this year due to agent's influence, Stallions, 3; jacks, 3.

Breed mares brought in due to agent's influence, 19.

Dairy Cattle—

Number of purebreds brought in—Bulls, 116; cows or heifers, 274.

Number of purebreds sold with agent's help—through individual sales, 157; through group sales, 79.

157; through group sales, 79.

Number of grade cows brought in for breeding purposes, 639.

Beef Cattle —

Number of purebreds brought in this year due to agent's influence—

Bulls, 28; cows or heifers, 89.

Number of purebred beef cattle sold with agent's help—Through individual sales, 154; through group sales, 0.

Number of grade cows brought in for breeding purposes, 95.

Number of beef breeding herds started, 36.

Number of beef feeding demonstrations supervised by agents, 14.

Number of cattle in these demonstrations, 715.

Hogs—

Number of purebreds brought in this year due to agent's influence—

Boars, 367; sows or gilts, 1118.

Number of purebred hogs sold with agent's help—through individual and group sales, 1695.

Number of farmers induced to start growing of grazing crops—for hogs, 1625.

Number of self-feeders put in at agent's suggestion, 76.

Sheep—

Number of purebred rams brought in this year due to agent's influence, 11; number of ewes, 37.

Poultry—

Number of farms on which poultry management has been improved as a result of agent's work, 711.

Live Stock Diseases and Pests—

Number of head of stock farmers have been induced to treat by agent or other extension worker:

Cattle treated for: Blackleg, 2774; tuberculosis, 6561; digestive and other troubles, 894; hemorrhagic speticemia, 91.

Hogs treated for: Cholera (single treatment), 1,826; worms, 9,583; cholera (simultaneous treatment), 35,095; lice, 21,654.

Sheep treated for: Stomach worms, 35.

Horses treated for: Distemper, 14; accidents, 7; other troubles, 115.

Stock personally treated or tested: Blackleg, 2,237; tuberculosis, 1,297; hemorrhagic septicemia, 91.

Hogs: Cholera, 12,511.

Fertilizers—

Number of farmers advised concerning the use of fertilizers, 11,992.

Number of fertilizer demonstrations with farmers, 314.

Acreage in these demonstrations * 2,107.

Communities influenced to buy cooperatively, 84.

Quantity bought cooperatively, (tons), 7,325.

* Amount of fertilizer used on demonstrations, (tons), 3,180.

Number of farmers home mixing on agent's advice, 5,263.
Estimated saving per ton to farmers, \$4.70.

Amount paid for fertilizer bought cooperatively, \$196,092.
Total amount saved by cooperative purchases, \$38,277.

Manure—

Number of farmers induced to take better care of farm manure, 1,313.
Number of farmers providing sheds by agent's advice, 186.
Number composting farm manure and waste products, 4,421.
Number of manure spreaders placed this year, 27

Silos—

Number built this year, 37.

Lime—

Number of farmers using lime at agent's advice, 1,571.
Quantity used—Burned lime, (tons), 46.5; limestone or equivalent, (tons), 4,970.
Number of farms on which soil was tested for acidity, 607.

Farm and Farmstead Improvements—

Work done with advice and help of agents and other extension workers:

| | |
|---|--------|
| Number of buildings erected | 244 |
| Number of farm buildings improved | 334 |
| Number of new building plans furnished | 205 |
| Number of farm buildings painted or whitewashed | 323 |
| Number of home water systems installed or improved | 87 |
| Number of home lighting systems installed this year | 82 |
| Number of home grounds improved | 300 |
| Number of farm and home sanitary conditions improved | 607 |
| Number of homes screened against flies and mosquitoes | 773 |
| Number of telephones installed | 13 |
| Number of farmers furnished plans and induced to adopt systematic crop rotations | 1,820 |
| Total acreage of such rotations | 55,779 |
| Number of new pastures established | 407 |
| Acreage | 5,054 |
| Number of old pastures renovated | 214 |
| Acreage | 6,307 |
| Number of drainage systems established | 20 |
| Number of farmers induced to drain all parts of their farms..... | 282 |
| Number of such acres drained by tile | 1,790 |
| Number of such acres drained by ditch | 10,024 |
| Number of farmers induced to remove stumps, 397; acreage, 6,528 | |
| Number of farmers who planted cover crops to be turned under 8,990 | |
| Number of new implements bought: Binders, haypresses, gas engines, 2-horse cultivators, tractors, motor trucks corn planters, mowers, grain drills, disk harrows, 1-horse cultivators, plows, hay | |

| | |
|--|-------|
| loaders, hay rakes, ensilage cutters, cream separators, spraying machines, manure spreaders, | 2,873 |
| Small tools | 4,327 |

Miscellaneous Extension Work—

| | |
|---|----------------|
| Number of visits by agent to: Demonstrators, Cooperators, other farmers, business men, boy's and girls' club members, | 48,581 |
| Number of miles traveled, railroad | 25,533 |
| Number of miles traveled—team, 700; automobile, 274,358; otherwise, 839 | Total, 301,430 |
| Calls on agent relative to work at office at home: personal, | 32,474 |
| telephone | 15,698 |
| Number of farmers' meetings held under auspices of agent or Extension Service | 1,997 |
| Number of meetings addressed by agent | 1,879 |
| Attendance | 97,093 |
| Number of field meetings held by agent | 530 |
| Attendance | 16,508 |
| Percentage of time spent in office | 22.7 |
| Percentage of time spent in field work | 77.3 |
| Number of official letters written | 28,677 |
| Number of articles relative to work written for publication, | 2,095 |
| Number of different circular letters sent out | 656 |
| Total number of copies of such letters | 121,769 |
| Number of U. S. Dept. of Agri. bulletins mailed | 16,709 |
| Number of Clemson College bulletins mailed | 14,954 |
| Number of Extension schools or short courses assisted | 19 |
| Total attendance at these schools | 2,871 |
| Number of boys attending agricultural or other schools or colleges as a result of club work | 124 |
| Number of demonstrators, cooperators, and club members having exhibits at fairs | 857 |
| Number of these winning prizes | 582 |
| Number of account books distributed to farmers | 928 |
| Number of farmers keeping cost records at agents advice—complete, 191; partial, 690, total | 881 |
| Number of farmers who began to keep bees at agent's suggestion, | 222 |
| Number of hives | 753 |
| Number of farmers influenced to grow sugar cane or sorghum for syrup | 6,936 |
| Assistance rendered in the purchase and sale of farm seed: | |

| Crop | Improved seed secured | | Offered for sale | |
|-------------------------------|-----------------------|---------|------------------|---------|
| | Farms | Bushels | Farms | Bushels |
| Corn | 659 | 1,689 | 231 | 17,105 |
| Cotton | 1931 | 10,762 | 1,386 | 10,585 |
| Oats | 544 | 8,071 | 444 | 81,420 |
| Irish and sweet potatoes..... | 349 | 9,478 | 221 | 26,395 |
| Wheat and Rye | 699 | 3,121 | 39 | 1,068 |

Susseeeful Undertakings by County Agents—

- Allendale County: Z. D. Robertson, County Agent.
Cooperative Marketing Association for Watermelons.
Cooperative Marketing of Farm Crops.
- Bamberg County: J. D. Brandon, County Agent.
Community fairs.
Getting a farm program adopted.
Sweet potato curing houses built.
- Barnwell County: H. G. Boylston, County Agent.
Grading and standardization of truck crops.
Community breeding of cotton.
Organization for cooperative marketing.
- Beaufort County: C. L. Baxter, County Agent.
Promotion of the use of purebred sires.
- Berkeley County: L. L. McLendon, County Agent.
Organization of community clubs.
Orchard campaign and cooperative purchase of fruit trees.
- Cherokee County: S. C. Stribling, County Agent.
Education in soil building.
Club work.
- Chester County: K. K. Sanders, County Agent.
Six community clubs organized.
Campaign for vetch, crimson clover and small grains.
- Chesterfield County: W. J. Tiller, County Agent.
(1) Cooperative purchase of large quantities of clover, vetch and rye seed for soil building purposes.
- Clarendon County: W. R. Gray, County Agent.
(1) Sweet potato curing houses built.
(2) Secured large acreages in winter cover crops.
- Colleton County: H. M. Kinsey, County Agent.
(1) Establishment of winter grading system for swine.
(2) Cooperative buying and selling of farm products.
(3) Boys' pig and corn club work.
- Darlington County: A. H. Ward, County Agent.
(1) Ten thousand acres of velvet beans worth in value and soil fertility, \$100,000.
(2) Boll weevil campaign resulting in a large percentage of farmers plowing under stalks, etc.
(3) This county leads the State in the campaign for cooperative marketing.
- Dillon County: S. W. Epps, County Agent.
(1) Community Organization.
(2) Orchard week resulting in 37 new home orchards.
(3) Another block added to our bull association.
- Dorchester County: T. B. Brandon, County Agent.
(1) Checked nine outbreaks of hog cholera, treating 2000 hogs.
(2) Cooperative purchase of fruit trees.

Edgefield County: A. B. Carwile, County Agent.

- (1) Six sweet potato curing houses.

Fairfield County: R. H. Lemmon, County Agent.

- (1) Promotion of purebred sires (35 purebred bulls in the county).
- (2) Cooperative purchase of fertilizer.
- (3) A large increase in the use of pure seed of best varieties.

Florence County: J. Ward McLendon, County Agent.

- (1) Promotion of dairy industry.
- (2) Cooperative selling of Irish potatoes (22 farmers) and purchase of supplies.

Georgetown County: M. M. McCord, County Agent.

- (1) Home orchard work and cooperative purchase of trees.
- (2) Soil building work by use of cover crops.

Greenville County: A. H. Chapman, County Agent.

- (1) A successful County Fair.
- (2) Three hundred and fifty farmers growing crimson clover for first time. Thirty tons of seed purchased cooperatively at a saving of \$1200.

Greenwood County: L. B. Altman, County Agent.

- (1) A "Potato School" resulting in 74 farmers growing and storing sweet potatoes.
- (2) A "Corn Show" at Piedmont Fair, eighty entries.
- (3) Seven silos and six dairy barns built.

Lancaster County: W. F. Howell, County Agent.

- (1) The cooperative purchase and sale of farm commodities.
- (2) Soil building work with cover crops.
- (3) Crop improvement through the use of better seed.
- (4) Livestock improvement (60 purebred bulls in county).

Lee County: J. P. Quinerly, County Agent.

- (1) Velvet Bean Campaign (3500 acres increase in acreage)
- (2) Boll Weevil Campaign.

Lexington County: J. W. Shealy, County Agent.

- (1) Community Fairs.
- (2) Boys' Club Work.
- (3) Live at Home campaign.

Marion County: Colin McLaurin, County Agent.

- (1) A sweet potato curing house.
- (2) Commercial orcharding started.
- (3) Boys' Clubs.

Anderson County: S. M. Byars, County Agent.

- (1) Standardization of varieties of cotton.
- (2) Beekeeping promoted, and beekeepers association organized.
- (3) Assisted with County Fair which was a great success.

Newberry County: T. M. Mills, County Agent.

- (1) Secured adoption of a farm program.
- (2) A 5200 bushel sweet potato house built.
- (3) A bull association organized.

Oconee County: Geo. Briggs, County Agent.

- (1) Orchard work.
- (2) Boys' Club Work.
- (3) Increased acreage in summer legumes and winter cover crops.

Pickens County: T. A. Bowen, County Agent.

- (1) Small grain campaign.
- (2) Demonstrated that hay grown on Pickens county farms using crimson clover and oats is cheaper than freight alone on Western hay.
- (3) Boys' Club work on community basis.

Richland County: J. R. Clark, County Agent.

- (1) Standardization of cotton and corn varieties being grown.
- (2) Home and commercial orcharding.
- (3) Increase in dairying and swine production.

Saluda County: J. M. Eleazer, County Agent.

- (1) Peach borer control.
- (2) Promotion of beef cattle production.
- (3) Interesting farmers in having family cows tested for tuberculosis by State veterinarian. Result, 925 cows tested.

Marlboro County: S. E. Evans, County Agent.

- (1) A permanent soil building program inaugurated.
- (2) Purebred sires (125 purebred boars and 26 purebred bulls in county).
- (3) A 6000 bushel sweet potato storage house.

Orangeburg County: L. S. Wolfe, County Agent.

- (1) The organization of the Orangeburg Purebred Hog Association.
- (2) Instructions given in the harvesting of 1200 acres of peanuts, a comparatively new crop.
- (3) Sweet potato house work (17 houses in county).

Spartanburg County: Ernest Carnes, County Agent.

- (1) Sweet potato storage, 9 houses in county.
- (2) Boys' Club Work.
- (3) "Orchard Week".

Sumter County: J. Frank Williams, County Agent.

- (1) Home orchard work and cooperative purchase of trees.
- (2) Commercial orchard work (200 acres peaches).

Union County: W. D. Wood, County Agent.

- (1) Soil building campaign (4000 lbs. crimson clover and 18000 lbs. vetch seed were put in).
- (2) A 4-block bull association organized.
- (3) Cooperative buying of fertilizers and seed amounting to \$28,605, saving \$6,550.

York County: J. R. Blair, County Agent.

- (1) Seven sweet potato houses built.
- (2) Secured the home mixing of fertilizers on a larger scale than ever.
- (3) Cover crop campaign.

PROJECT NO. 4—HOME DEMONSTRATION

The work of this project is conducted under the immediate supervision of Winthrop College. Under the Smith-Lever law, the Clemson Agricultural College is the State agency for the administration of all extension work in agriculture and home economics and the Director of Extension as joint representative of the United States Department of Agriculture and Clemson Agricultural College is the one official held responsible by both institutions for the proper conduct of all lines of extension work. By special agreement between the Board of Trustees of Clemson and Winthrop, the immediate supervision of home demonstration work is assigned to Winthrop College and 25 per cent of Federal and State Smith-Lever appropriations are set aside for home demonstration work under the supervision of Winthrop College.

The Home Demonstration work is conducted largely through community organizations called Home Demonstration Clubs. Among the outstanding lines of work during the year has been the continuation of the marketing work started previously, which looks to providing an income for the farm woman. The progress made in establishing curb markets in the cities and towns of the state and of marketing products peculiar to localities has been very satisfactory.

The South Carolina Home Producer's Association has been organized for the purpose of standardizing the products and providing for the marketing of various products which are of the quality and kind not usually found in commerce.

A full report on Home Demonstration work is being prepared and published by Winthrop College.

PROJECT NO. 5—NEGRO DEMONSTRATIONS

The negro county agent work is conducted with the assistance and under the immediate supervision of the State College at Orangeburg.

The plan of this work provides for educating the negroes through demonstrations, community fairs, boys' and girls' clubs, canning clubs among women and girls, publications, and otherwise, to

- (1) Diversify farm crops
- (2) Grow more winter and summer gardens
- (3) Make their farms more nearly self supporting.
- (4) Raise more livestock and use more milk in their homes
- (5) Grow more fruit for home use in summer and for canning for winter use.
- (6) Grow more poultry for home use and for market.

This project along with the work with negroes done by extension workers in other projects is designed not only to aid the negroes to adjust themselves to boll weevil conditions, but to aid them in establishing a permanent system of agriculture. The following facts will serve to indicate what is being accomplished by the seven agents employed.

County Organizations—

Boys' Clubs, 27; membership, 138.

Canning Clubs, 31; membership, 214.

Poultry Clubs, 4; membership, 20.

Pig Clubs, 10; membership, 116.

Women's Clubs, 18; membership, 105.

Organized under the home makers club project by the extension agents.

Crops—

| | Demonstrations | Acreage | Average Yield |
|---|----------------|---------|------------------|
| Cotton | 38 | 670 | 926 lbs. |
| Corn | 51 | 601 | 45 bu. |
| Oats | 62 | 625 | 35 bu. |
| Wheat | 42 | 175 | 14 bu. |
| Rye | 8 | 52 | |
| Alfalfa | 12 | 4 | |
| Crimson Clover | 1 | 4 | |
| Red Clover | 2 | 4 | |
| Bur Clover | 2 | 1 | |
| Sorghum Mixtures | 20 | 40 | |
| Other hay and forage crops | 6 | 49 | |
| <hr/> | | | |
| Total for hay and forage crops | 43 | 102 | |
| Cowpeas | 49 | 334 | |
| Soy beans | 6 | 40 | |
| Velvet beans | 120 | 68 | |
| Peanuts | 90 | | |
| Irish potatoes | 9 | 8½ | |
| Sweet potatoes | 93 | 120 | |

Orchards—

Demonstrations, 59 orchards; 1775 trees.

Inspected, pruned, sprayed, wormed, and planted, 56 orchards; 1235 trees.

Lime—

| | |
|---|----|
| Number of farmers using lime at agents advice | 40 |
| Quantity so used (tons), | 22 |

Manure—

| | |
|--|------|
| Farmers instructed in care of, | 425 |
| Quantity being saved, estimated (tons) | 8300 |

Fertilizers—

| | |
|---|------------|
| Number of farmers advised concerning the proper use of fertilizers | 710 |
| Number of demonstrations | 35 |
| Quantity used on demonstrations (tons) | 31 |
| Number of communities buying cooperatively | 7 |
| Value of fertilizer so bought | \$1,433.50 |
| Saving through such purchases | 463.50 |
| Number of farmers home mixing fertilizers | 91 |

Organizations—

| | |
|--|------------|
| Farmers' Clubs organized, 36; membership, 1170. | |
| Farmers' Clubs in the state, 36; membership, 1170. | |
| Clubs that include the farm families, 33. | |
| Number of farmers' organizations buying and selling cooperatively | 15 |
| Value of commodities bought and sold cooperatively | \$6,723.50 |
| Saving to farmers | 2,865.00 |

Live Stock: Horses and Mules—

| | |
|---|---|
| Number of purebred horses or mules brought into the state due to agent's influence | 4 |
|---|---|

Dairy Cattle—

| | |
|--|----|
| Number of purebred dairy cattle brought into the state due to agent's influence | 12 |
| Number of grade cattle brought in | 65 |

Beef Cattle—

| | |
|---|----|
| Number of purebred beef cattle brought in | 25 |
| Number of grade beef cattle brought in | 75 |

Sheep and Goats—

| | |
|--------------------------------|----|
| Number of flocks started | 66 |
|--------------------------------|----|

Poultry—

| | |
|---|-----|
| Number of purebred fowls brought in | 360 |
|---|-----|

Live Stock Diseases and Pests—

| | |
|--|-----|
| Number of animals farmers have been induced to treat by agent or other extension worker | |
| Hogs, cholera | 130 |

Farm and Farmstead Improvements—

| | |
|--|----|
| Number of buildings erected | 69 |
| Number of farm buildings improved | 54 |
| Number of new building plans furnished | 20 |
| Number of home water systems installed or improved | 30 |

| | |
|---|------|
| Number of home lighting systems installed | 15 |
| Number of home grounds improved | 196 |
| Number of farm and home sanitary conditions improved | 221 |
| Number of homes screened against flies and mosquitoes | 99 |
| Number of privies erected (sanitary) | 66 |
| Number of telephones installed | 78 |
| Number of new pastures established | 27 |
| Acreage in new pastures | 230 |
| Number of old pastures renovated | 60 |
| Number of acres drained by ditch | 7350 |
| Number of farmers induced to remove stumps | 79 |
| Number of farmers induced to terrace sloping lands | 686 |
| Acreage | 336 |
| Number of home gardens planted or improved | 240 |
| Number of farmers induced to save surplus farm products for winter use | 680 |
| Number of road demonstrations assisted in | 2 |
| Number of new implements and tools bought | 612 |

Miscellaneous Extension Work—

| | |
|--|--------|
| Number of visits by agents to farms | 3,580 |
| Number of miles traveled | 24,574 |
| Calls on agent relative to work at office or home | 1,278 |
| Number of farmers' meetings held under auspices of agent or extension division | 433 |
| Meetings addressed by agent | 514 |
| Total attendance at such meetings (approximate) | 22,097 |
| Field meetings held by agent | 103 |
| Total attendance at such meetings | 1,522 |
| Number of bulletins of U. S. Dept. of Agri. mailed | 2,168 |
| Number of bulletins or circulars from State College | 95 |
| Number of visits to schools relative to work | 208 |
| Extension schools or short courses assisted in | 2 |
| Total attendance at such schools | 53 |
| Number of boys attending agricultural or other schools or colleges as a result of club work | 6 |
| Number of times agents have been visited by specialists from college or department | 65 |
| Number of farmers keeping complete or partial cost records | 54 |
| Number of farmers selecting seed | 645 |
| Number of farmers influenced to grow sugar cane or sorghum for syrup | 800 |

PROJECT NO. 6—LIVE SEOCK

Live Stock Specialists have conducted the following lines of work:

1. Encouraging the use of purebred sires.
2. Culling inferior animals.

3. Promoting the use of home grown feeds, and the growing of forage crops to be harvested by livestock.
4. The feeding of more balanced rations.
5. The erection of more and better fences.
6. Cooperative marketing of livestock in car lots.
7. Livestock judging.

Among the accomplishments of the year secured because of the assistance of livestock specialists are the following:

| | |
|---|------|
| 1. Number of purebred herds established | 16 |
| 2. Number of purebred bulls placed | 32 |
| 3. Number of purebred cows placed | 75 |
| 4. Number of grade cows placed | 140 |
| 5. Number of purebred boars placed | 16 |
| 6. Number of purebred sows placed | 107 |
| 7. Number of feeding steers bought | 231 |
| 8. Judging demonstrations | 25 |
| 9. Feeding demonstrations | 9 |
| 10. Meat cutting demonstrations | 12 |
| 11. Public meetings held | 63 |
| 12. Attendance | 6100 |
| 13. First class letters written | 4166 |

PROJECT NO. 7—DAIRY

The organization of cooperative bull associations has continued to occupy a large part of the time of dairy specialists. Four of these associations were organized during the spring and preliminary work done looking to the organization of a number of other associations.

We feel that this work is the most important that can be done at present, especially when we realize that one of the greatest needs of this State is more and better dairy cows. According to tabulated reports from the counties of the State, it is estimated that 240 additional milk cows are needed at the present time. If these associations, of which we have 21 in active condition at the present time, continue to function for five or six years, we shall be supplied with dairy cattle of good quality produced economically in the State and will at the same time have the assurance that we are bringing in no contagious diseases from other sections.

Another remarkable development along dairy lines has been the organization since the first of January of eight new creameries. Work in connection with these creameries has been largely with the farmers who are producing the milk and cream which they use.

We have discouraged the establishment of cream stations and our work along this line has been very successful. Cream stations, because of the long delay which they enforce between the time of the production of the cream and manufacture of butter bring about the production of a very poor grade of butter. This naturally reacts against the creameries and through them against the cream producers. Managers of the various creameries are now opposed to this method of collecting cream.

Another line of work which has received some attention is dairy herd management. This work includes assisting in balancing rations and plans for remodeling barns and silos.

We have been fortunate in having the services of Mr. Wintermyer to assist us for two periods of about a month each during the year. Mr. Wintermyer is loaned by the Dairy Division of The United States Department of Agriculture and his services have been very acceptable and effective.

The dairy work is progressing very satisfactorily and is, of course, receiving considerable encouragement because of the boll weevil situation in the State.

PROJECT NO. 8—AGRONOMY

Extension work in agronomy is conducted along the following three lines:

1. Soil Improvement.
2. Crop Improvement.
3. Pasture and Forage Crops.

I. Soil Improvement.

During the summer and fall of 1921 Mr. Winters was in charge of a campaign for soil improvement through the use of summer legumes and winter cover crops. Mr. Winters spent most of his time giving lectures and conducting field meetings on the farms of men who are making outstanding success with this kind of work. Mr. Winters' work attracted a great deal of attention and much interest was secured in this state. The result has been tremendous increase in the leguminous crops planted in the state, both as winter cover crops and summer legumes. Mr. Winters left the college on leave of absence for graduate work at Cornell University in February and returned the first of June. This made it impossible for us to start any field demonstrations in this project, though we plan to do this next year when Mr. Winters will complete the work for his doctor's degree at Cornell and return to us permanently.

II. Crop Improvement.

During the summer of 1921, it was decided to employ additional help for Seed Improvement work as at that time Mr. Jas. L. Carberry was the only specialist engaged in this line of work. Mr. E. E. Hall, who had been in this line of work formerly, was reemployed to take up the work in the Pee Dee section of the state with headquarters at Florence, S. C. Mr. Hall was employed September 1, 1921. Mr. P. H. Senn was employed December 1, 1921, to take up the work in the lower part of the state with headquarters at Spartanburg. Most of the work which has been done was spent with cotton breeding.

Mr. Hall has located cooperative breeding projects in seven counties and has several good community organizations started and expects to enlarge his work next year. This work has been organized on a community basis as far as possible throughout the state.

Mr. P. H. Senn has located Seed Improvement Projects in eight counties and the work in all of these is progressing very satisfactorily.

Mr. Jas. L. Carbery has community breeding projects in eight counties with several community organizations in some other counties. Mr. Carbery is doing some work with corn as well as cotton and both corn and cotton work is making satisfactory progress.

III. Pasture and Forage Crops.

During the latter part of 1921 and early in 1922, Mr. S. L. Jeffords, who is conducting this line of extension work, started 37 pasture demonstrations in 15 different counties. In addition to this Mr. Jeffords has done much emergency work, such as advising farmers regarding pasture problems, writing news articles for publication and conferring with County Agents and other specialists. More demands have been made on Mr. Jeffords than he has been able to meet. We have had a favorable year for pasture demonstrations and have received many reports, all of which indicate that this work is succeeding.

PROJECT NO. 9—HORTICULTURE

Four men were engaged in the Horticultural Extension work. The most important work done was in connection with home and commercial orchards, sweet potato curing houses and related sweet potato work, home gardening and special trucking.

The orchard work consists of advice in the selection of orchard sites, encouragement in the cooperative purchase of nursery stock and other supplies; and organizing at the proper season "Orchard Week" at which time intensive work is done in the respective counties along orchard lines, such as holding meetings, giving lectures and demonstrations in planting, pruning, spraying and general orchard management. During the year 257 new orchards were established with a total of 212,700 trees. These trees were purchased cooperatively at an average cost of 12 cents per tree, whereas if they had been purchased in the usual way, they would have cost 17 cents each with less assurance of desirable varieties. Cooperative buying, in this case, saved \$10,635.00. During the year the owners of 752 orchards were receiving advice either directly or indirectly through the machinery of this project.

It is interesting to note the gradual development around and resulting from the home orchard demonstrations. D. E. Good, of Walhalla, one of the first orchard demonstrators, sold from 500 apple trees a sufficient quantity of fruit to give him a net return of \$1,863.00. This demonstration was of double value because of the fact of its proving that apples can be successfully grown on a commercial scale in the vicinity of Walhalla, also serving as an object lesson.

Commercial peach planting has been especially active during the period covered by this report. The extent of commercial development extends through the sand hills from Augusta, Georgia to Hamlet, North Carolina. Sand hill land that only a few years ago sold for 50 cents an

acre now produces first quality peaches and offers a foundation for a commercial industry.

Local associations were formed at McBee, Aiken, Gramling, and Wedgefield. Members of these associations with other prominent peach growers formed the South Carolina Peach Growers' Association.

The sweet potato work consisted of campaigns staged for the planting of one variety of disease free seed, seed inspection, bedding and seed treating and harvesting and field grading demonstrations. The increase in the storage houses built was more than 100 per cent and the results obtained through our campaigns were most outstanding, resulting in South Carolina shipping approximately 100 cars of first class sweet potatoes. We received reports from all of the houses, 180 government standard and approximately 100 remodeled, with an aggregate of 435,650 bushels of space, and the maximum loss resulting from rot was less than 5 per cent. The value of the stored crop could easily be estimated at \$435,650.00.

Our vegetable work consisted of home and market gardening and mill village gardening, and special cropping. The gardening work was handled in a cooperative way with the home demonstration department and the mill village Welfare Workers. We staged campaigns through "Garden Week" and "Garden Schools", which work was followed up through the use of gardening lessons sent to the respective clubs on the 25th of the previous month. Through this method, we reached 2,007 gardeners and in many instances the garden carried a few new vegetables that were previously unknown.

Our special cropping consisted in assisting with the growing of fall beans, English peas, asparagus, and fall Irish potatoes. In this work we assisted with the growing of 462 plantings, directed 28 plant growers and organized 4 vegetable associations. The fall bean work was an outstanding success and will project itself over the entire trucking section.

Peach borer control—We helped establish the use of paradichlorobenzene by putting on two demonstrations—J. V. Smith, Greer, S. C., and R. M. Watson, Ridge Springs, S. C.,—on 6,000 trees. The salt was applied at a cost of 2 cents per tree and peach borer control was 98 per cent effective.

Lime sulphur plants—We assisted with the establishment of four commercial lime sulphur plants. These plants cost approximately \$25.00 each and are of sufficient size to supply the community needs of lime sulphur. Lime sulphur was made at a cost of approximately 11 cents per gallon or at a saving of 9 cents per gallon.

PROJECT NO. 10.—POULTRY.

One specialist in poultry extension work, Mr. N. R. Mehrhof, gives full time to the promotion of this increasingly important phase of agriculture.

This work is conducted along certain very definite lines, among which are the following:

1. Promoting standard bred poultry.
2. Organizing and assisting county and community poultry associations.
3. Culling, so as to eliminate any unprofitable birds.
4. Assisting commercial poultrymen.
5. Developing efficient farm flocks as demonstrations.

Publicity work along all these lines has been very satisfactory and it now appears that under boll weevil conditions, the poultry business is going to be very much more important than heretofore.

The following is quoted from Mr. Mehdhoff's report for the year:

"The back yard flock, the farm flock, the commercial flock, are all receiving better care and management. Purebred poultry is being put out daily. At this time it is impossible to give accurate figures stating the amount of purebred eggs, chicks, and stock that the people have purchased. All we can say is that the business has been tremendous.

"Standard bred poultry is being urged at all times and the people over the State realize its importance, and have been purchasing some of the best stock that could be obtained in this section.

"County poultry associations have taken a prominent part in poultry extension work. At this time, there are six county associations and one State association. It is indeed gratifying to note the interest that has been taken in these associations; and, also the extent in which one can reach a large number of people at one time.

"Culling is in progress at this time, and all are willing to learn the method of eliminating the non-producer. They are beginning to realize that their profits will be less if they have to feed a number of slackers. Culling demonstrations will be held through October of this year.

"Commercial poultry has taken a great increase. Several plants are being completed now, and from all indications, there should be some typical commercial plants this fall. The White Leghorn predominates as the commercial egg producer on these farms.

"Poultry records and accounts are being urged and there are about fifty people keeping accurate records on egg production, expenditures and receipts. We are in hopes that more people will realize the value and importance of keeping records.

"The capon demonstrations have been well started and we have conducted twelve of the sixteen demonstrations. There has been a tremendous interest in caponizing this season, and a large part of my time has been devoted to capon demonstrations. Detailed reports as to the results of these demonstrations will be furnished at a later date. Up to date there has been less than two percent mortality, which is indeed remarkable when we stop to consider that every one present did some caponizing.

"Circular letters are written each month, emphasizing the importance of some timely subject. Since starting Extension work, the interest has been so great that it was deemed advisable to issue monthly

circular letters. They have met the approval of the people and considerable educational work can be conducted in this manner.

"In summary, I wish to state that the prospects of poultry raising appear very bright in South Carolina. With the interest of the people, I thoroughly believe that greater cooperation will be obtained which will result in better work. Relative to projects that are being conducted, it seems as though all projects started will be developed and carried to a successful end."

PROJECT NO. 11.—MARKETING.

The work of the marketing agents has consisted of demonstrations in grading, handling, packing, loading and shipping of truck, fruit and field crops and of the organizations of cooperative associations of truck and fruit growers. In addition to this under the authority of a State law passed two years ago, official state standards have been fixed for grading the following truck and fruit crops: apples, asparagus, cabbage, celery, cucumbers, lettuce, onions, peaches, potatoes, strawberries, sweet potatoes, and tomatoes.

Along with this work goes the establishment of standard containers and rules for packing fruit and vegetable crops. The state grades which have been fixed are the same as the standard grades on these crops. This reacts in favor of the growers because it promotes a uniform understanding of grades throughout the country.

Grading and standardizing the crops being grown and the methods of handling them is working a revolution in the trucking industry. It was found necessary in order to carry into effect our plans for educating truck growers in properly handling their produce to employ three additional truck graders. These men began work in May and were employed for the busy shipping season. In addition to this, the full time specialists, Messrs. Harkey and Lewis are giving most of their time to field work. During the period, January 1st, 1922, to July 1st, 1922, a total of 1,905 demonstrations in grading and packing were made by the five marketing specialists and 513 inspections and demonstrations in car loading were made. It is estimated that there were in attendance at these demonstrations over 12,000 people. This is indicative of the volume of field work being done by the marketing agents and helps to explain the great influence this work is having.

One of the most clear cut pieces of work in grading has been done in connection with the shipments of sweet potatoes in this state. This work was all done by the marketing agents and under their supervision. Of course, it is planned as soon as possible to turn this work over to the sweet potato association, and this will be done when the work passes the demonstration stage.

Six organizations for the handling of truck and fruit crops have been promoted during the year and these are now in successful operation. Unfortunately the amount of truck produced together with high freight rates has worked to prevent truck growers from realizing any profit on the industry this year. This is true of the trucking industry from Long Island to Florida and is not confined to this State.

PROJECT NO. 12—ENTOMOLOGY.

Extension work in Entomology has consisted of boll weevil control, bee keeping and miscellaneous insect work.

During the year the people of the State have come to realize more than ever before the seriousness of the boll weevil problem. They studied this problem and have learned more about it than during any previous period. The poisoning work with calcium arsenate during 1921 did not prove to be of extraordinary value, largely on account of weather conditions.

With the beginning of the present crop year the Extension Service planned to put into operation eight demonstrations in boll weevil control through the use of calcium arsenate. These demonstrations were located in different part of the State in order that they might be carried out under varying weather and soil conditions. They were located on the farms of intelligent men, who would give personal supervision to the work and see that instructions were carefully followed. In addition these demonstrations were closely supervised by men, employed by the Extension Service and the Experiment Station, and who have had considerable experience in the use of poison and the operation of dusting machinery. The following are the points at which the demonstrations were located: Clemson College, Anderson, Greenwood, Johnston, Eastover, Sumter, Florence and Darlington.

These demonstrations are expected to develop some useful information regarding the subject of boll weevil control under South Carolina weather and soil conditions. In addition to these demonstrations a number of poisoning demonstrations are being conducted by the County Agents cooperating with the leading farmers in the various counties. Another year will find us, without doubt, in possession of more definite information than we have had heretofore on this subject.

The bee keeping work has continued to develop very satisfactorily from its beginning as a war measure. Mr. Prevost has continued in charge of this line of work in the field. Practically his entire time is taken up in giving demonstrations and conducting model apiaries in all sections of the State. In a number of counties the bee keepers have organized themselves into associations for mutual benefits. The demonstration apiaries being supervised by Mr. Prevost are marketing a number of products among which are: honey, queens, packages of bees and beeswax. One of the big problems of the bee keeper in this State is to have a large number of worker bees in every hive ready for the early honey flow, which is the important honey flow in this State. Mr. Prevost has demonstrated how this can be done through the prevention of swarming.

PROJECT NO. 13.—PLANT PATHOLOGY.

There are no definitely organized projects in plant disease work and no full time specialist is employed. Practically the only extension work along this line has been of an emergency character.

A considerable amount of work has been done along the line of identifying plant diseases and recommending proper treatment.

A great many conferences are held with members of the Horticultural and other divisions.

PROJECT NO. 14.—BOYS' CLUB WORK.

Boys' Club work is based on the crop year. The following is a report of the results of Boys' Club Work for the calendar year, 1921:

Corn Clubs—

Results of members making complete reports:

Number of members enrolled, 733.

Members making complete reports, 410.

Total yield reported, 18,860 bushels.

Average yield per acre, 46 bushels.

Average cost per bushel, 42 cents.

Estimated Results of Members not Making Complete Reports:

Members not making complete reports, 323; yields, 10,962 bushels.

Total estimated yields, 10,982.

Average yield per acre, 34 bushels.

Average cost per bushel, 49 cents.

Total value of all corn produced, \$29,842.00.

Total cost of production, \$13,302.38.

Net profit, \$16,539.62.

Cotton Clubs—

Results of members making complete reports:

Number of members enrolled, 31.

Making complete reports, 15.

Pounds of lint cotton produced, 7,240.

Value of lint cotton, \$1,446.00.

Cotton seed produced, 16,035 pounds.

Value of all cotton seed produced, \$280.61.

Total value of crops, lint and seed, \$1,726.61.

Total cost of production, \$581.55.

Net profit, \$1,145.06.

Yield seed cotton per acre, 1,685 pounds.

Average cost per pound of seed cotton, 2.3 cents.

Estimated Results of Members not Making Complete Reports:

Members not making complete reports, 16.

Pounds of lint cotton produced, 5,600.

Value of lint cotton, \$1,120.00.

Cotton seed produced, 11,200 pounds.

Value of cotton seed produced, \$196.00.

Total value crop including lint and seed, \$1,316.00.

Total cost of production, \$648.00.

Net profit, \$668.00

Yield seed cotton per acre, 1,680 pounds.

Average cost per pound of seed cotton, 4 cents.

Peanut Clubs—

Results of members making complete reports:

Members enrolled, 84.

Members making complete reports, 7.

Number of acres, 7.

Total yield of nuts, 194 bushels.

Value of nuts, \$384.59.

Yield of hay, 9,790 pounds.

Value of hay, \$97.90.

Total value of nuts and hay, \$482.49.

Cost per bushel, of nuts, 23 cents.

Total cost of crop, nuts and hay, \$141.97.

Net profit, \$340.52.

Estimated Results of Members not Making Complete Reports:

Members not making complete reports, 77.

Number of acres, 77.

Total yield of nuts, 1,771 bushels.

Total value of nuts, \$3,480.01½.

Yield of hay, 107,646 pounds.

Value of hay, \$1,076.46.

Total value of nuts and hay, \$4,556.47½.

Total cost of crop, nuts and hay, \$1,694.00.

Cost per bushel of nuts, 35 cents.

Net profit, \$2,862.47½.

Miscellaneous—Cowpeas, Potatoes, Etc.—

Members enrolled, 91.

Estimated value of products produced, \$4,550.00.

Cost of production, all expenses, \$2,730.00.

Net profit, \$1,820.00.

Profit per acre, \$20.00.

Pig Clubs—Results of members making complete reports, fattening and breeding class:

Number of members enrolled, 1,039.

Members making reports to date, 75.

Number of animals kept and developed, 75.

Weight of animals at beginning of contest, 3,000 pounds.

Weight of animals at close of contest, 17,625 pounds.

Total gain in weight, 14,625 pounds.

Average gain per day, 1 3-4 pounds.

Total value of animals, close of contest, market price, \$2,115.00.

Total expenses, \$1,770.75.

Net profit, \$344.25.

Cost per pound of gain, 6 cents.

Sow and Litter Class:

Members reporting to date, 25.

Brood sows kept, 25.

Value of brood sows at beginning of contest, \$1,875.00.

Value of brood sows at close of contest, \$2,500.00.

Increase in value of brood sows, \$625.00.

Number of pigs raised, 150.

Value of pigs raised, \$3,750.00.

Total cost of feed and care, \$500.00.

Total cost, including price of sows, \$2,375.00.

Net profit, \$2,000.00.

Estimated Results of Members not Making Complete Reports, Fattening and Breeding Class:

Members not making complete reports, 939.

Number of animals kept and developed, 939.

Value of animals at beginning of contest \$18,780.00.

Weight of animals at beginning, 28,170 pounds.

Weight of animals at close of contest, 159,830 pounds.

Total gain in weight, 131,660 pounds.

Average daily gain, 1 1-3 pounds.

Total value of animals at close, market price, \$22,780.00.

Expense for feed and care, \$2,756.00.

Net profit, \$1,000.00.

Cost per pound of gain, 9 3-4 cents.

Calf Clubs—Results of Members Making Complete Reports:

Number enrolled, 32.

Number reporting to date, 14.

Number of animals developed, 14.

Weight of animals at beginning of contest, 3,074 pounds.

Weight of animals at close of contest, 7,350 pounds.

Value of animals at beginning of contest, \$1,330.00.

Value of animals at close of contest, \$2,520.00.

Expenses, including purchase price and feed, \$1,452.50.

Net profit, \$1,067.50.

Estimated Results of Members not Making Complete Reports:

Members not making complete reports, 18.

Number of animals developed, 18.

Weight of animals at beginning of contest, 3,600 pounds.

Weight of animals at close of contest, 9,000 pounds.

Total gain in weight, 5,400 pounds.

Value of animals at beginning of contest, \$1,530.00.

Value of animals at close of contest, \$3,060.00.

Expenses including purchase price and feed, \$1,890.00.

Net profit, \$1,170.00.

FUNDS FOR EXTENSION SERVICE WORK FROM ALL

SOURCES—FISCAL YEAR ENDING JUNE 30, 1922.

| | |
|--|--------------|
| 1. State appropriation (State Smith-Lever) | \$ 94,147.00 |
| 2. Federal appropriation (Federal Smith-Lever) | 147,902.57 |
| 3. County funds | 103,276.97 |
| 4. U. S. Department of Agriculture funds | 32,952.00 |

| | |
|------------------------------|----------------|
| 5. Miscellaneous funds | 14,146.00 a |
| Total Resources | \$392,424.54 b |

a. Of the above total \$7,146.00 consists of funds raised and disbursed by local farmers' associations with which the extension service was co-operating in maintaining cotton grading work. This fund discontinued on July 1, 1922.

b. Of the above total \$123,558.29 was expended for home demonstration work and work in cities under the general supervision of Winthrop and the immediate supervision of Miss Christine N. South.

EXPENDITURES BY PROJECTS

Fiscal Year 1921-1922.

| No. | Project. | Expenditure Total | State S.-Lever | Federal S.-Lever | U.S.D.A. Funds | County Funds | Misc. Funds |
|--------------|----------------------------------|----------------------|-------------------|---------------------|-------------------|-----------------|----------------|
| 1. | Administration | 27,741.03 | \$15,755.17 | \$10,785.86 | \$1,200.00 | \$..... | ..... |
| 2. | Printing and Distr. of Pub. | 6,649.89 | 3,165.61 | 3,484.28 | ..... | ..... | ..... |
| 3. | County Agents | 136,527.80 | 16,190.74 | 47,452.33 | 17,868.42 | 55,016.31 | ..... |
| 4. | Home Demonstration | 123,558.29 | 23,772.41 | 34,713.64 | 9,811.58 | 48,260.66 | 7,000.00 |
| 5. | Negro Demonstration | 8,172.16 | 509.52 | 5,382.64 | 2,280.00 | ..... | ..... |
| 6. | Live Stock | 11,906.51 | 2,685.18 | 9,221.33 | ..... | ..... | ..... |
| 7. | Dairy | 10,824.53 | 6,169.40 | 4,655.13 | ..... | ..... | ..... |
| 8. | Agronomy | 17,045.08 | 7,585.14 | 9,459.94 | ..... | ..... | ..... |
| 9. | Horticulture | 14,153.39 | 6,941.90 | 7,211.40 | ..... | ..... | ..... |
| 10. | Poultry | 3,095.39 | 36.21 | 3,059.18 | ..... | ..... | ..... |
| 11. | Marketing | 11,575.60 | 6,263.96 | 5,311.64 | ..... | ..... | ..... |
| 12. | Entomology | 4,775.24 | 1,909.19 | 2,866.05 | ..... | ..... | ..... |
| 13. | Botany and Plant Pathology..... | 600.00 | ..... | 600.00 | ..... | ..... | ..... |
| 14. | Boys' Club Work | 7,283.86 | 2,910.57 | 3,233.29 | 1,140.00 | ..... | ..... |
| 15. | Cotton Grading and Marketing... | 8,515.86 | 252.00 | 465.86 | 6,652.00 | ..... | 7,146.00 |
| Totals | | \$392,424.54 | \$94,147.00 | 147,902.57 | \$32,953.00 | \$103,276.97 | \$14,146.00 |

PERSONNEL EXTENSION SERVICE—1921-1922.

A. Administrative Officers.

| | |
|---|-----------------|
| Director of Extension | W. W. Long |
| Assistant Director of Extension | D. W. Watkins |
| District Agent | H. S. Johnson |
| District Agent | A. A. McKeown |
| District Agent | T. B. Young |
| Chief of Horticulture | C. C. Newman |
| Chief of Agronomy | C. P. Blackwell |
| Chief of Botany and Plant Pathology | H. W. Barre |
| Chief of Entomology | A. F. Conradi |
| Chief of Dairying | J. P. LaMaster |
| Chief of Animal Husbandry | L. V. Starkey |
| Agricultural Editor | A. B. Bryan |
| Supervising Agent Boys' Club Work | L. L. Baker |

B. Specialists.

- D. T. Herrman, Live Stock Specialist.
 W. J. Sheely, Live Stock Specialist.
 S. D. Sims, Live Stock Specialist.
 D. C. Badger, Agent in Dairying.
 C. G. Cushman, Agent in Dairying.
 W. J. Keegan, Dairy Husbandman.
 N. E. Winters, Specialist in Soils and Fertilizers.
 J. L. Carberry, Agronomist.
 E. E. Hall, Plant Breeder.
 P. H. Senn, Plant Breeder.
 S. L. Jeffords, Forage Crop Specialist.
 G. P. Hoffman, Extension Horticulturist.
 A. E. Schilleter, Assistant Extension Horticulturist.
 C. A. Owens, Assistant Extension Horticulturist.
 Rudolph Farmer, Assistant Extension Horticulturist.
 N. R. Mehrhof, Poultry Husbandman.
 F. L. Harkey, Field Agent in Marketing.
 L. H. Lewis, Agent in Marketing.
 N. S. Franklin, Specialist in Packing and Grading. (a).
 W. A. Stringfellow, Specialist in Packing and Grading. (a).
 Bolling Hall, Specialist in Packing and Grading. (a).
 D. D. Whitcomb, Specialist in Packing and Grading. (a).
 E. S. Prevost, Bee Specialist.
 B. O. Williams, Assistant Supervising Agent Boys' Club Work.
 J. E. Moore, Cotton Grader. (b).
 H. J. McCutcheon, Cotton Grader. (b).
 T. M. Wolfe, Cotton Grader. (b)
 (a) These specialists only on for a period of three months.
 (b) The appointment of these men terminated June 30, 1922.

C. COUNTY AGENTS.

| Name | County | Name | County |
|-------------------------------|--------|-----------------------------|--------|
| L. B. Altman, Greenwood. | | T. M. Mills, Newberry. | |
| C. L. Baxter, Beaufort. | | C. L. McCaslan, Calhoun. | |
| J. R. Blair, York. | | M. M. McCord, Georgetown. | |
| T. A. Bowen, Pickens. | | G. C. McDermid, Charleston. | |
| H. G. Boylston, Barnwell. | | W. G. McGowan, Abbeville. | |
| G. R. Briggs, Oconee. | |Edgefield. | |
| J. D. Brandon, Bamberg. | | Colin McLaurin, Marion. | |
| T. B. Brandon, Dorchester. | | J. W. McLendon, Florence. | |
| S. M. Byars, Anderson. | |Berkeley. | |
| Ernest Carnes, Spartanburg. | | J. P. Quinerly, Lee. | |
| T. M. Cathcart, Williamsburg. | | Z. D. Robertson, Allendale. | |
| A. B. Carwile, McCormick. | | H. K. Sanders, Chester. | |
| A. H. Chapman, Greenville. | |Jasper | |
| J. R. Clark, Richland. | | J. W. Sanders, Kershaw. | |
| W. O. Davis, Horry. | | J. W. Shealy, Lexington. | |

| Name | County |
|----------------|------------|
| J. M. Eleazer, | Saluda. |
| S. W. Epps, | Dillon. |
| S. E. Evans, | Marlboro. |
| W. R. Gray, | Clarendon. |
| O. T. Harper, | Aiken. |
| W. F. Howell, | Lancaster. |
| H. M. Kinsey, | Colleton. |
| R. H. Lemmon, | Fairfield. |

| Name | County |
|------------------|---------------|
| S. C. Stribling, | Chester. |
| L. S. Wolfe, | Orangeburg. |
| W. J. Tiller, | Chesterfield. |
| C. L. Vaughan, | Laurens. |
| A. H. Ward, | Darlington. |
| J. F. Williams, | Sumter. |
| W. D. Wood, | Union. |
| Gustavus York, | Hampton |

LOCAL AGENTS.

H. E. Daniels, Assistant District Agent.

| Name | County |
|--------------------|-------------|
| Benjamin Barnwell, | Beaufort. |
| G. W. Daniels, | Orangeburg. |
| J. E. Dickson, | Richland. |

| Name | County |
|----------------|------------|
| W. H. Hilyard, | Greenwood. |
| E. D. Jenkins, | Bamberg. |
| Jason Maloney, | Sumter. |

D. CLERKS AND STENOGRAPHERS.

| | |
|------------------------------|----------------------------|
| Mrs. Helen S. Torrence, | Librarian, (a) |
| S. W. Evans, | Treasurer, (a) |
| E. B. Elmore, | Bookkeeper, (a) |
| C. M. Hall, | Chief Clerk and Accountant |
| Louise Burgess, | Stenographer |
| Leila Hart, | Stenographer |
| Lucile Rochester, | Stenographer |
| Julia Hook, | Mailing Clerk, (a) |
| Sally Corbett, | Stenographer, (a) |
| Rosa Morrison, | Stenographer |
| Mrs. Elizabeth E. Bellinger, | Stenographer |
| Mrs. Louise H. Blakely, | Stenographer |
| Bessie M. Cranford, | Stenographer |
| Harriett V. Moore, | Stenographer |
| Ella Norris, | Stenographer |

(a) Paid in part from Extension Sources.

E. HOME DEMONSTRATION AGENTS.

This list of agents not shown for the reason they are working under immediate supervision of Winthrop College and names will appear in the report of Winthrop College.

THE NEW FISCAL YEAR

The outlook for extension work at the beginning of this fiscal year was very bright. People apparently appreciate the value of this work more than they have at any time in the past. Supervising of regular demonstrations, together with call made on our agents has kept them practically all of the time in the field.

Among the demonstrations that are attracting statewide interest should be mentioned the boll weevil poisoning work conducted in six different counties, as follows: Darlington, Sumter, Richland, Greenwood, Anderson, and Saluda. In addition to these demonstrations, the Experiment Station conducted similar work at the college station and at the Florence station. We believe that the results of these demonstrations will prove of interest and give them as follows:

| Place and Variety | Applications | | Yield per acre in Seed Cotton | | |
|------------------------------------|--------------|-----------|-------------------------------|----------|------|
| | No. | Cost p.a. | Dusted | Undusted | Gain |
| Clemson College—Cleveland | 5 | \$4.22 | 1078 | 792 | 286 |
| Florence—Dixie Triumph | 4 | 3.43 | 988 | 803 | 185 |
| Darlington, (a)—Cleveland | 7 | 5.67 | 850 | 299 | 551 |
| Darlington (b)—Lightning Exp. | 8 | 6.12 | 878 | 271 | 607 |
| Sumter—Cleveland | 5 | 3.00 | 861 | 363 | 498 |
| Eastover (a)—Cleveland | 4 | 2.75 | 1407 | 1039 | 368 |
| Eastover (b)—Lightning Exp. | 3 | 2.01 | 1414 | 117 | 297 |
| Johnston—Cleveland | 3 | 1.98 | 512 | 310 | 202 |
| Greenwood—Cleveland | 6 | 4.08 | 827 | 486 | 341 |
| Average | 5 | 3.69 | 979 | 609 | 370 |

The Extension Service is asking for the same State appropriation as was made in January, 1922. The amount is just enough to off-set the Federal Smith-Lever appropriation. Under the Smith-Lever Law, the Federal Smith-Lever appropriation is available only when off-set dollar for dollar by the State appropriation. The Smith-Lever law passed in 1914 has reached its maturity in so far as appropriations are concerned. The State has never yet lost any of the Federal appropriation because of failure on the part of the State to make the necessary appropriation for off-setting.

Yours very truly,

W. W. LONG,
Director.

Report of the Secretary of the Fertilizer Board

Dr. W. M. Riggs, President, Clemson Agricultural College,
Clemson College, South Carolina.

Dear Sir:

December 20, 1922.

I respectfully submit the following report of the work of the Fertilizer Department for the fiscal year ending June 30th, 1922.

The tonnage of commercial fertilizers as shown by the sale of tags (507,068 tons) was twenty-five percent less than last year, and the smallest since 1905 or 17 years ago. This resulted in part from the financial depression which has prevailed, causing manufacturers and dealers to withhold the credit usually extended; and in part to the advent of the boll weevil completing the entire infestation of the State. Just as happened in other states, their coming caused panic and demoralized our agriculture and every other related business. Under such conditions, our farmers were uncertain what crops they should substitute for cotton and plan most rigid economy in experimenting with other new money crops. Figures furnished by the Southern Fertilizer Association as compiled from reported sales in eleven leading South Eastern States show increased sales of commercial fertilizers, especially so in those states having weevils the longest,—notably Alabama, Mississippi and Florida—doubling that of last year, while only Georgia and South Carolina have fallen behind. But with the experience of these other states to guide us and Extension Agents to direct, it is hoped and believed that our state will soon regain its poise and normal prosperity. Very encouraging reports of results from the intelligent use of Calcium Arsenate inspires the confident hope that this will prove their most destructive year in this state, and the morale of our farmers improves with this prospect of their defeat.

While reports indicate in this state only half or less of average cotton crop, yet from this reduced crop will derive at present prices more than half the average revenue from its sale, while we have produced at home more abundant supplies of other agricultural products than any former year. If the coming of the weevil results in such diversity of crops as will insure an ample supply of these home products which we have been accustomed to buy and import from other states, it may not prove an unmixed evil.

INSPECTION AND ANALYSIS

With the reduced volume of business evident at the beginning of the season, eight (8) inspectors were employed and entered on their work at the same salary per month as last year. Of the official samples drawn and sent us by the inspectors, ninety-five percent were drawn at special request of the purchasers, to whom copies of their analyses were sent soon as made. As shippers familiarized themselves with the new fertilizer law, a more careful compliance was observed by them, so but few violations were found and reported.

For results of analysis I refer to our general Bulletin No. 212 and Dr. R. N. Brackett's detailed report; and for expenses incurred to the report of our College Treasurer.

Respectfully submitted,

H M. STACKHOUSE.

Report of State Chemist.

Dr. W. M. Riggs, President

Clemson College, S. C.

Dear Sir:—

I respectfully submit the following report of the analytical work of this department on commercial fertilizers, waters, etc., done for the Board of Trustees, Fertilizer Control, and for the citizens of our State, and for other departments of the college, and of referee work for other laboratories, and of collaborative work with the Association of Official Agricultural Chemists, during the year ending June 30th., 1922. For the sake of comparison the figures for last year are given side by side with this year:—

| | 1920-1921 | 1921-1922 |
|---|-----------|-----------|
| Official samples of fertilizers | 763 | 722 |
| Farmers' samples of fertilizers | 36 | 47 |
| Waters | 61 | 84 |
| Ores, minerals, rocks, etc., for identification | 47 | 47 |
| Limestones, marls, and lime | 5 | 6 |
| Assays for gold and silver | 2 | 8 |
| Ashes (wood, etc.) | 0 | 1 |
| Miscellaneous | 19 | 30 |
| Experiment Station work | 758 | 668 |
| | <hr/> | <hr/> |
| | 1691 | 1613 |

The most striking facts shown in this summary are:—First that the official fertilizer samples have decreased a little over 5 1-4 per cent. as compared with last season; second, that the number of farmers' samples of fertilizers has increased about 30 1-2 per cent.; third, that the number of water analysed has increased about 37 3-4 per cent. as compared with last year; fourth, that the miscellaneous samples have increased about 58 per cent.; fifth, that the samples analysed for the Experiment Station have decreased nearly 12 per cent., however the actual number of individual determinations involved in analysing the samples this season was very much greater than last season, as 222 of the 668 samples were complete analyses of soils requiring nine separate constituents to be determined in each sample of soil.

A complete report of the work done for the Experiment Station has been made to the Director, H. W. Barre, but I may say for your information that the 668 samples listed consisted of: 222 soil samples, 259 samples of cotton seed and 14 samples of peanuts for oil and moisture; one sample of silage—496 samples in all, analyzed by Mes-

srs. Robertson, Foy, Gunter and Freeman. The remaining 172 of the 668 samples were analysed by Professor Lippincott, and consisted of:—120 samples of soil for nitrate and moisture in connection with an Adams' project; 41 samples of calcium arsenate examined for the Entomological Division and for citizens of the State, in order to determine whether or not they met the Government requirements; one sample of lead arsenate; eight samples of feeds for the Dairy Division; one sample of soil; and one clay.

OFFICIAL FERTILIZER SAMPLES

Classification

| | 1920-1921 | 1921-1922 |
|--|-----------|-----------|
| Complete fertilizers | 411 | 434 |
| Special mixtures (phosphoric acid and ammonia) | 94 | 89 |
| Acid phosphates | 79 | 73 |
| Acid phosphates with potash | 6 | 2 |
| Cottonseed meals | 77 | 30 |
| Nitrate of soda | 44 | 34 |
| American Potash | 0 | 0 |
| Foreign potash | 41 | 39 |
| Dried Blood | 1 | 1 |
| Sulphate of ammonia | 1 | 4 |
| Tankage | 0 | 0 |
| Fish | 3 | 15 |
| Miscellaneous | 6 | 1 |
| | <hr/> 763 | <hr/> 722 |

DEFICIENT SAMPLES

Of the 719 samples considered in the discussion 94 fell below the commercial value based on guarantee, as follows:—

| | |
|--|-----------|
| In available phosphoric acid | 10 |
| In ammonia | 26 |
| In potash | 15 |
| In available phosphoric acid and ammonia | 13 |
| In available phosphoric acid and potash | 9 |
| In ammonia and potash | 18 |
| In available phosphoric acid, ammonia and potash | 3 |
| Total | 94 |

The miscellaneous sample was rape castor meal, and together with one sample of kainit, and one of muriate, neither of which was guaranteed, is omitted from the discussion which follows.

Last season out of 759 samples 95, or 12.52 per cent. were deficient in commercial value based on guarantee, while this season the number so deficient is 94 out of 719, or 13.07 per cent.

The extent to which these 94 samples fell below the guaranteed analysis in per cent. is as follows—

| | 0.00-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|---------------------------------|-----------|-----------|-----------|--------|------------|
| In available phosphoric acid... | 3 | 11 | 4 | 13 | 5 |
| In ammonia | 19 | 20 | 12 | 9 | 2 |
| In potash | 6 | 14 | 11 | 9 | 5 |
| | — | — | — | — | — |
| | 28 | 45 | 27 | 31 | 12 |

This is on the whole a much worse showing than was made last year, especially in ammonia, but also in potash.

Of the 94 samples which fell below guaranteed commercial value, twenty-seven were deficient three per cent, or more below that value, as follows:—

| | |
|--|----|
| In available phosphoric acid | 1 |
| In ammonia | 10 |
| In potash | 3 |
| In available phosphoric acid and ammonia | 3 |
| In available phosphoric acid and potash | 2 |
| In ammonia and potash | 5 |
| In available phosphoric acid, ammonia and potash | 3 |

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Last season out of 95 samples deficient in commercial value based on guarantee, 42, or 44.21 per cent., were deficient three per cent, or more, while this season out of 94 samples twenty-seven were deficient three per cent, or more, or 28.72 per cent., a very large drop. When the comparison is made on the total number of samples, last season out of 759 samples, 42 were three per cent. or more deficient in commercial value, or 5.53 per cent., while this season out of 719 samples, twenty-seven were three or more per cent. deficient, or 3.76 per cent.

The extent to which these twenty-seven samples, deficient three per cent, or more in commercial value, fell below the guaranteed analysis in per cent. is as follows:—

| | 0.00-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|-----------|-----------|-----------|--------|------------|
| In available phosphoric acid | 0 | 3 | 0 | 4 | 2 |
| In ammonia | 1 | 2 | 7 | 9 | 2 |
| In potash | 1 | 2 | 3 | 4 | 2 |
| | — | — | — | — | — |
| | 2 | 7 | 10 | 17 | 6 |

In addition to the 94 samples deficient in commercial value based on guarantee, there were 230 samples which were found below guarantee in one or more ingredients, the deficiency being made up, however, by an excess of other ingredients. They were deficient as follows:—

| | |
|--|-------|
| In available phosphoric acid | 53 |
| In ammonia | 41 |
| In potash | 111 |
| In available phosphoric acid and ammonia | 1 |
| In available phosphoric acid and potash | 9 |
| In ammonia and potash | 15 |
| | <hr/> |
| | 230 |

Last season out of 759 samples, 229 were found deficient in one or more ingredients, but not deficient in commercial value based on guarantee, or 30.17 per cent., while this season out of 719 samples, 230 were thus deficient, or 31.98 per cent., a slight increase.

The extent to which these 230 samples fell below the guaranteed analysis in per cent, is as follows:—

| | 0.00-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|-----------|-----------|-----------|--------|------------|
| In available phosphoric acid | 14 | 17 | 15 | 11 | 3 |
| In ammonia | 37 | 18 | 3 | 1 | 0 |
| In potash | 28 | 64 | 29 | 16 | 1 |
| | <hr/> | <hr/> | <hr/> | <hr/> | <hr/> |
| | 79 | 99 | 47 | 28 | 4 |

While the potash deficiencies are about the same as last season, and the phosphoric acid deficiencies are about one-third less, the deficiencies in ammonia are nearly 2.4 times as many more this season than last.

In connection with the subject of deficient, the results of some of the analyses this season are interesting as compared with last season:

Acid Phosphates—There were no goods of this class guaranteed less than 16 per cent. either this season or last. There were 73 samples received for analysis this season, of which two were deficient, one three per cent. or more in commercial value, while last season there were 79 samples, of which 17 were deficient and of these 17 six were three per cent. or more deficient. This is a much better showing than was made last season in the quality of these goods.

Acid Phosphates with Potash—There were only two samples of this class of goods this season, one guaranteed 10-0-2, and one 10-0-4, both of which were deficient in potash, but neither deficient in commercial value. Last season there were six samples, one guaranteed 10-0-2, deficient in potash, but not in commercial value, and the other five guaranteed 10-0-4, two of which were deficient in potash, but not three per cent. in commercial value, while the other three were deficient in both phosphoric acid and potash and three per cent. or more in commercial value.

In connection with the deficiencies in potash, not only in acid phosphate with potash but also in other mixed goods, the following summary for the last eighteen years may prove interesting. In it is to be noted that none of the deficient samples here listed in deficient in commercial value.

| Year | Number of Samples | Deficient in One or More Ingredients. | Deficient in Potash only. | Deficient in Potash Per Cent |
|------|-------------------|---------------------------------------|---------------------------|------------------------------|
| 1905 | 522 | 165 | 53 | 32.12 |
| 1906 | 655 | 201 | 62 | 30.84 |
| 1907 | 743 | 153 | 34 | 22.22 |
| 1908 | 713 | 161 | 54 | 33.54 |
| 1909 | 805 | 197 | 85 | 43.14 |
| 1910 | 1188 | 235 | 86 | 36.60 |
| 1911 | 1605 | 393 | 182 | 46.31 |
| 1912 | 1689 | 380 | 225 | 59.21 |
| 1913 | 1922 | 389 | 90 | 23.13 |
| 1914 | 2537 | 534 | 113 | 21.16 |
| 1915 | 1227 | 333 | 107 | 32.13 |
| 1916 | 1598 | 378 | 54 | 14.28 |
| 1917 | 1594 | 477 | 75 | 15.72 |
| 1918 | 1474 | 438 | 68 | 15.52 |
| 1919 | 1301 | 362 | 100 | 27.62 |
| 1920 | 1668 | 519 | 193 | 37.19 |
| 1921 | 763 | 229 | 116 | 50.65 |
| 1922 | 722 | 230 | 111 | 48.26 |

This summary shows that of the samples deficient in one or more ingredients, but not deficient in commercial value, a very large percentage is deficient in potash only.

This deficiency was especially marked during the years 1909 to 1912, inclusive. There was a marked drop in the years 1913 and 1914, but in 1915 the percentage deficiency was the same as in 1905. The figures for 1916 are not very significant on account of the small number of samples on the market containing potash. The percentage deficiency in 1919 was considerably greater than it was in 1917 and 1918, and higher than it had been since 1915, but the deficiency this season and last approaches that of 1912, being 50.65 last season and 48.26 per cent. this season, against 59.21 per cent. for 1912, which is still the maximum record for potash deficiency.

Top Dressers.—We have analysed fewer samples of goods of this class than last year, twenty-one samples against twenty-four last year, and while the percentage deficiency is somewhat smaller, the percentage of three per cent. deficient is very much larger as shown by the following figures:—Eight out of twenty-one, or 38.09 per cent., were deficient in commercial value, and of these eight, six or 75 per cent., were three per cent. or more deficient in commercial value, as compared with ten out of twenty-four, or 41.66 per cent. deficient in commercial value, of which five, or 50 per cent., were three per cent. or more deficient. Based on the total number of samples, the three percents were 28.57 per cent. this year against 20.83 per cent. last year..

One each of the following guarantee was analyzed this season with the results indicated and a comparison with last year:— 2-7-0, deficient in ammonia but not in commercial value; last year three samples, all found up to guarantee. 3-10-1, found up to guarantee; none last

year. 4-7½-1, deficient in ammonia but not in commercial value; last year one, deficient in ammonia, but not three per cent, in commercial value. 4-7½-2, deficient in ammonia and potash, and three per cent. in commercial value; last year none. 4-7½-2½, found up to guarantee; last year one of this guarantee, deficient in ammonia, but not three per cent. in commercial value. 4-8-0 deficient in ammonia and three per cent in commercial value; last year none. 4-8-4, deficient in phosphoric acid and potash, but not in commercial value; last year none. 4-10-4, deficient in ammonia and potash, but not in commercial value; last year none. 5-10-0, deficient in ammonia, but not three per cent. in commercial value; last year none.

Two of guarantee 4-10-0, one found up to guarantee, the other deficient in ammonia, but not in commercial value; last year none.

Ten of the guarantee 4-7½-0.—one deficient in ammonia, but not three per cent. in commercial value, two deficient in ammonia, and three per cent. in commercial value, three found up to guarantee, four deficient in ammonia and three per cent. in commercial value; last year six samples of this guarantee:—none up to guarantee, two not deficient in commercial value, one deficient in ammonia and the other in phosphoric acid; one not deficient three per cent. in commercial value but deficient in ammonia; three deficient in ammonia, and three per cent. or more in commercial value.

AVERAGES OF ANALYSES

| | —1920-1921— | | —1921-1922— | |
|--|-------------|------------|-------------|------------|
| | Found | Guaranteed | Found | Guaranteed |
| Acid Phosphates | | | | |
| Available phosphoric acid | 16.53 | 16.00 | 17.08 | 16.00 |
| Special Mixtures (Acid phosphates with Ammonia) | | | | |
| Available phosphoric acid | 8.50 | 8.10 | 8.63 | 8.18 |
| Ammonia | 3.68 | 3.63 | 4.01 | 3.92 |
| Complete Fertilizers | | | | |
| Available phosphoric acid | 8.55 | 8.09 | 8.68 | 8.25 |
| Ammonia | 3.28 | 3.07 | 3.30 | 3.16 |
| Potash soluble in water..... | 2.77 | 2.67 | 2.96 | 2.93 |
| Cottonseed Meals | | | | |
| Ammonia equivalent of Nitrogen | 7.33 | 7.01 | 7.39 | 7.05 |
| Nitrate of Soda | | | | |
| Ammonia equivalent of Nitrogen | 18.61 | 18.01 | 18.79 | 18.16 |
| Kainits | | | | |
| Potash soluble in water | 13.63 | 12.91 | 12.99 | 12.34 |
| Muriate of Potash | | | | |
| Potash soluble in water | 49.89 | 49.00 | 51.43 | 48.67 |
| Manure Salts | | | | |
| Potash soluble in water | 18.02 | 20.00 | 19.46 | 20.00 |
| Acid Phosphates with Potash | | | | |
| Available phosphoric acid | 10.18 | 10.00 | 11.40 | 10.00 |
| Potash soluble in water | 3.06 | 3.66 | 2.71 | 3.00 |

As was the case last season, there were no samples of American potash received for analysis this season. The averages for the other potash listed above represent the following number of samples:— kainits this year 32, last year 37; muriates of potash this year three, last year the same; manure salts this year two, last year one. Last year we received six samples of acid phosphates with potash, while this year there were only two.

The following table shows the yearly averages of the analyses of fertilizers from the time the Board of Trustees of The Clemson Agricultural College of South Carolina took charge of the fertilizer inspection down to the present time, or from 1891 to 1922, inclusive.—

YEARLY AVERAGE OF ANALYSES FROM 1891 TO 1922, INCLUSIVE.

| Season | Acid Phosphates | | Acid Phosphate with Potash | | Complete Fertilizer | | | | Cotton Seed Meals | | | | Kainita | | Muriate Potash | | Nitrate of Soda | | Acid Phosphate with Ammonia | | |
|-----------|-------------------|-------------------------------|----------------------------|-------------------------------|-----------------------------------|-------------------|-------------------------------|-----------------------------------|-------------------|-----------------------------------|-------------------|-------------------|-----------------------------------|-------------------|-------------------|-----------------------------------|-------------------|-------------------|-------------------------------|-------------------|-------|
| | Number of Samples | Available Phosphate—Per Cent. | Number of Samples | Available Phosphate—Per Cent. | Potash Soluble in Water—Per Cent. | Ammonia—Per Cent. | Available Phosphate—Per Cent. | Potash Soluble in Water—Per Cent. | Number of Samples | Potash Soluble in Water—Per Cent. | Ammonia—Per Cent. | Number of Samples | Potash Soluble in Water—Per Cent. | Ammonia—Per Cent. | Number of Samples | Potash Soluble in Water—Per Cent. | Ammonia—Per Cent. | Number of Samples | Available Phosphate—Per Cent. | Ammonia—Per Cent. | |
| | | | | | | | | | | | | | | | | | | | | | |
| 1890-1 | 49 | 13.02 | 19 | 11.84 | 1.65 | 173 | 4.83 | 2.68 | 1.96 | 30 | ..... | 8.37 | 21 | 12.75 | 1 | 51.96 | 1 | 19.22 | ..... | ..... | ..... |
| 1891-2 | 29 | 12.92 | 16 | 11.50 | 1.49 | 112 | 8.83 | 2.80 | 1.95 | 25 | ..... | 8.21 | 18 | 12.51 | ..... | ..... | 1 | 18.63 | ..... | ..... | ..... |
| 1892-3 | 48 | 12.82 | 22 | 11.63 | 1.32 | 150 | 9.00 | 2.91 | 1.65 | 20 | 2.62 | 8.40 | 20 | 12.05 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1893-4 | 46 | 13.24 | 26 | 12.01 | 1.51 | 132 | 9.27 | 2.53 | 1.79 | 22 | 2.45 | 8.64 | 17 | 12.37 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1894-5 | 46 | 13.55 | 26 | 12.09 | 1.66 | 117 | 9.42 | 2.55 | 1.77 | 33 | 2.58 | 8.19 | 16 | 12.80 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1895-6 | 42 | 13.43 | 26 | 11.99 | 1.39 | 115 | 9.31 | 2.64 | 1.86 | 34 | 2.57 | 8.45 | 16 | 12.45 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1896-7 | 59 | 13.61 | 34 | 12.06 | 1.61 | 117 | 9.55 | 2.70 | 1.91 | 40 | 2.53 | 8.69 | 22 | 12.44 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1897-8 | 63 | 13.67 | 50 | 11.54 | 2.06 | 141 | 9.15 | 2.70 | 1.93 | 39 | 2.37 | 8.39 | 22 | 12.68 | ..... | ..... | 1 | 19.23 | ..... | ..... | ..... |
| 1898-9 | 73 | 13.74 | 68 | 11.77 | 1.99 | 131 | 9.32 | 2.73 | 2.21 | 40 | 2.76 | 8.25 | 14 | 12.78 | 2 | 51.93 | 2 | 18.96 | ..... | ..... | ..... |
| 1899-1900 | 73 | 13.58 | 63 | 11.58 | 2.00 | 124 | 9.50 | 2.73 | 2.13 | 52 | 2.27 | 8.73 | 8 | 12.73 | 4 | 50.95 | 3 | 19.01 | ..... | ..... | ..... |
| 1900-1 | 56 | 11.00 | 55 | 11.49 | 2.05 | 139 | 9.40 | 2.87 | 2.47 | 60 | 2.38 | 8.55 | 15 | 12.61 | 2 | 48.92 | 3 | 18.96 | ..... | ..... | ..... |
| 1901-2 | 45 | 14.11 | 51 | 11.09 | 2.55 | 141 | 9.39 | 2.84 | 2.84 | 49 | 2.57 | 7.88 | 16 | 12.85 | 4 | 50.54 | 3 | 19.03 | ..... | ..... | ..... |
| 1902-3 | 51 | 13.74 | 55 | 10.94 | 2.65 | 139 | 9.02 | 2.69 | 2.42 | 60 | 2.27 | 8.08 | 15 | 12.92 | 2 | 50.25 | 2 | 19.15 | ..... | ..... | ..... |
| 1903-4 | 59 | 14.32 | 75 | 10.12 | 2.81 | 180 | 9.22 | 2.99 | 2.90 | 57 | 2.28 | 7.92 | 11 | 12.94 | 7 | 49.79 | 6 | 18.87 | ..... | ..... | ..... |
| 1904-5 | 81 | 11.81 | 82 | 10.70 | 3.07 | 250 | 9.19 | 3.12 | 2.90 | 62 | 2.41 | 7.42 | 26 | 12.54 | 6 | 50.49 | 7 | 18.73 | ..... | ..... | ..... |
| 1905-6 | 57 | 14.95 | 94 | 10.97 | 3.30 | 375 | 9.34 | 3.26 | 2.98 | 71 | 2.42 | 7.51 | 29 | 12.83 | 13 | 50.05 | 19 | 18.67 | ..... | ..... | ..... |
| 1906-7 | 111 | 14.95 | 72 | 10.76 | 3.21 | 390 | 8.91 | 3.29 | 3.29 | 99 | 2.68 | 7.82 | 13 | 12.78 | 13 | 51.52 | 20 | 18.49 | ..... | ..... | ..... |
| 1907-8 | 91 | 14.71 | 64 | 10.57 | 3.54 | 303 | 9.17 | 3.01 | 3.01 | 114 | 2.37 | 7.40 | 17 | 12.91 | 15 | 51.04 | 17 | 18.83 | ..... | ..... | ..... |
| 1908-9 | 108 | 15.02 | 80 | 10.55 | 2.93 | 396 | 9.16 | 3.03 | 3.03 | 115 | 2.39 | 7.27 | 41 | 13.03 | 14 | 50.46 | 21 | 18.26 | ..... | ..... | ..... |
| 1909-10 | 139 | 15.18 | 74 | 10.16 | 3.51 | 599 | 8.89 | 3.31 | 3.34 | 133 | 2.37 | 7.50 | 167 | 13.10 | 26 | 50.96 | 40 | 18.10 | ..... | ..... | ..... |
| 1910-11 | 187 | 15.39 | 101 | 10.02 | 3.48 | 942 | 9.00 | 3.34 | 3.33 | 177 | 2.46 | 7.26 | 159 | 13.00 | 24 | 50.18 | 50 | 18.46 | ..... | ..... | ..... |
| 1911-12 | 180 | 15.42 | 116 | 10.68 | 3.25 | 900 | 9.07 | 3.46 | 3.22 | 153 | 2.17 | 7.54 | 158 | 13.04 | 47 | 50.42 | 76 | 18.55 | ..... | ..... | ..... |
| 1912-13 | 176 | 15.83 | 95 | 10.43 | 3.63 | 1199 | 8.86 | 3.54 | 3.57 | 171 | 2.56 | 7.37 | 165 | 13.72 | 29 | 51.31 | 48 | 18.64 | ..... | ..... | ..... |
| 1913-14 | 229 | 16.10 | 91 | 10.63 | 3.03 | 1523 | 8.79 | 3.44 | 3.75 | 188 | 2.86 | 7.28 | 163 | 14.12 | 65 | 50.41 | 92 | 18.35 | ..... | ..... | ..... |
| 1914-15 | 150 | 16.30 | 69 | 10.75 | 2.69 | 773 | 8.91 | 2.96 | 2.70 | 90 | 2.46 | 7.21 | 156 | 13.51 | 2 | 50.17 | 71 | 18.56 | 18 | 12.00 | 3.75 |
| 1915-16 | 200 | 16.40 | 7 | 10.72 | 2.12 | 855 | 8.73 | 3.42 | 1.49 | 245 | 2.31 | 7.05 | 151 | 13 | 0 | ..... | 33 | 18.53 | 555 | 8.55 | 3.71 |
| 1916-17 | 118 | 16.62 | 1 | 10.90 | 3.91 | 501 | 8.70 | 3.31 | 2.13 | 202 | 2.44 | 6.88 | 154 | 0 | 0 | 0.00 | 45 | 18.69 | 610 | 8.76 | 3.67 |
| 1917-18 | 105 | 16.71 | 3 | 9.99 | 2.82 | 521 | 8.51 | 3.09 | 2.25 | 266 | 2.33 | 7.06 | 147 | 0 | 0 | 0.00 | 21 | 18.50 | 470 | 8.66 | 3.59 |
| 1918-19 | 69 | 16.86 | 6 | 10.36 | 3.58 | 544 | 8.82 | 2.95 | 2.23 | 199 | 2.34 | 7.06 | 137 | 0 | 0 | 0.00 | 0 | 18.59 | 357 | 8.84 | 3.39 |
| 1919-20 | 81 | 16.47 | 11 | 9.82 | 3.10 | 992 | 8.64 | 3.27 | 2.92 | 91 | 2.61 | 7.08 | 151 | 0 | 0 | 0.00 | 40 | 18.47 | 284 | 8.82 | 3.27 |
| 1920-21 | 73 | 16.33 | 6 | 10.18 | 3.06 | 411 | 8.55 | 3.25 | 2.77 | 77 | ..... | 7.33 | 37 | 13.82 | 4 | 46.78 | 40 | 18.61 | 94 | 8.50 | 3.68 |
| 1921-22 | 79 | 17.08 | 2 | 11.40 | 2.71 | 434 | 8.68 | 3.30 | 2.96 | 30 | ..... | 7.39 | 32 | 12.99 | 3 | 51.13 | 34 | 18.79 | 80 | 8.63 | 4.01 |

NITROGEN

Deficiencies, Sources, Availability

Nitrogen, deficiencies:—In connection with the subject of deficiencies in nitrogen, or ammonia equivalent the following table is interesting. It is to be noted that none of the deficient samples here listed is deficient in commercial value.

| Year | Number of Samples | Deficient in One or More Ingredients. | Deficient in Nitrogen only. | Deficient in Nitrogen Per Cent |
|------|-------------------|---------------------------------------|-----------------------------|--------------------------------|
| 1905 | 522 | 165 | 61 | 36.96 |
| 1906 | 655 | 201 | 87 | 43.28 |
| 1907 | 743 | 153 | 81 | 52.94 |
| 1908 | 713 | 161 | 77 | 47.82 |
| 1909 | 805 | 197 | 74 | 37.56 |
| 1910 | 1188 | 235 | 79 | 33.61 |
| 1911 | 1605 | 393 | 107 | 27.22 |
| 1912 | 1689 | 380 | 71 | 18.68 |
| 1913 | 1922 | 389 | 190 | 48.84 |
| 1914 | 2537 | 534 | 257 | 48.13 |
| 1915 | 1227 | 333 | 145 | 43.54 |
| 1916 | 1598 | 378 | 130 | 34.39 |
| 1917 | 1594 | 477 | 224 | 46.96 |
| 1918 | 1474 | 438 | 189 | 43.15 |
| 1919 | 1301 | 362 | 160 | 44.19 |
| 1920 | 1668 | 519 | 123 | 23.70 |
| 1921 | 763 | 229 | 22 | 9.61 |
| 1922 | 722 | 230 | 41 | 17.82 |

This table shows that of the samples deficient in one or more ingredients, but not deficient in commercial value, a very large percentage are generally deficient in ammonia only. This deficiency amounted in thirteen seasons out of the eighteen listed to over thirty-three and one-third per cent.; two seasons it amounted to nearly fifty per cent.; one season to over fifty per cent. The percentage deficiency this season approaches very closely to that in 1912, when it amounted to 18.68 per cent. against 17.82 this season. Only once in the eighteen years has the deficiency been less than ten per cent., in 1921.

Nitrogen, sources and availability:—The new fertilizer law, effective July 1, 1920, requires the manufacturer of fertilizers to guarantee the per cent. of water-soluble ammonia equivalent of nitrogen within such limits as the Board of Fertilizer Control may prescribe. The limits adopted for this season, and which will be in force again next season, will be found in the first part of this fertilizer bulletin for 1922. This resolution of the board of Fertilizer Control allows a variation of ten points on goods with a water-soluble guaranteed up to and including 33 1-3 per cent., and of fifteen points on goods guaranteed above that figure. For example, goods guaranteed 25 per cent. water-soluble would be passed if found 15 per cent. or 35 per cent.; and

goods guaranteed 50 per cent. water soluble would be passed if found 35 per cent. or 65 per cent.

As was the case last season, the results of this season's determinations of water-soluble ammonia equivalent of nitrogen indicate a large use of highly water-soluble ammoniates, nitrate of soda and sulphate of ammonia and the like.

The following table summarizes the results of the work for this season and last season, and shows the number of samples falling within certain percentage limits and the percentage relation of these figures to the total number of samples examined, this relation being shown in parentheses —

| Per Cent. Water-soluble equivalent of Nitrogen. | Number of Samples | |
|--|-----------------------|-----------------------|
| | 1920-1921 | 1921-1922 |
| Less than 10 | 0 | 0 |
| 10-20 | 2 | 0 |
| 20-30 | 1 | 0 |
| 30-40 | 6 (1.19 per cent.) | 3 (0.57 per cent.) |
| 40-50 | 10 (1.99 per cent.) | 9 (1.72 per cent.) |
| 50-60 | 47 (9.36 per cent.) | 47 (8.99 per cent.) |
| 60-70 | 87 (17.33 per cent.) | 100 (19.12 per cent.) |
| 70-80 | 145 (20.82 per cent.) | 171 (32.69 per cent.) |
| 80-90 | 155 (30.87 per cent.) | 154 (29.45 per cent.) |
| 90-100 | 49 (9.76 per cent.) | 39 (7.45 per cent.) |

While these figures speak for themselves, it may not be out of place to say that one would not expect to find an ammoniated fertilizer containing less than ten per cent. of water-soluble ammonia equivalent of nitrogen, inasmuch as organic ammoniates will generally show at least ten per cent., and sometimes more. We have found cottonseed meals with as high as sixteen per cent., that is nearly one per cent. out of a total of six per cent. nitrogen.

There were 523 samples of ammoniated fertilizers examined for water-soluble ammonia equivalent of nitrogen this season of which 330 samples were guaranteed in water-soluble, or 63.09 per cent., while last season there were 502 samples of which 138 were guaranteed in water-soluble, or 27.49 per cent. Although this shows a very considerable improvement over last season, there would still seem to be too many samples on the market which fail to be in conformity with the new fertilizer law, with which the manufacturers have had ample time to familiarize themselves. However, perhaps the fertilizer inspectors sometimes fail to note the water-soluble guarantee, and are, therefore, in part at least to blame for the apparent neglect of the manufacturers.

According to the records of the Secretary of the Board of Fertilizer Control, the 523 samples of ammoniated fertilizers were distributed between 64 companies or subsidiaries, eighteen of which did not guarantee water-soluble ammonia equivalent of nitrogen on any samples aggregating forty-two samples; thirteen companies guaranteed water-soluble on all samples, aggregating forty-four samples; the remaining thirty companies guaranteeing part of their samples, 244.

Last season the 502 samples of ammoniated fertilizers examined for water-soluble ammonia equivalent of nitrogen were distributed between seventy-four companies or subsidiaries, and of these 313 samples were distributed between sixteen companies of subsidiaries, each of which were represented by ten or more samples. Only eighty of these 313 samples were guaranteed in water-soluble ammonia, or 25.55 per cent. Two companies guaranteed about one-half of their samples; two about one-fourth; four about one-third; five about one-sixth; one guaranteed one-fifth; the remainder guaranteed one sample out of thirteen, and two out of twenty-seven respectively.

It seems worth while to quote the following paragraphs from last year's report:—"These results would seem to indicate one of two things, either the manufacturers have not exercised sufficient care in analyzing their raw materials before making their water-soluble ammonia guarantees, or else they have assumed that organic ammoniates would show no water-soluble ammonia, and have based their guarantees entirely on the fact that the inorganic ammoniates, such as nitrate of soda and nitrate of potash, and sulphate of ammonia, are 100 per cent. water-soluble."

"In the future it will be our duty to make public the names of all manufacturers who fail to comply with the fertilizer law requiring the guarantee of water-soluble ammonia equivalent of nitrogen, and of all manufacturers whose guarantees do not fall within the limits prescribed by the Board of Fertilizer Control. As unsatisfactory as are the results this season, they show that the manufacturers can comply with the limits prescribed by the Board of Fertilizer Control, if they exercise reasonable care in making their guarantees and that these limits are liberal."

In the following table are given the names and addresses of the eighteen companies, or subsidiaries, who according to the records of the Secretary of the Board of Fertilizer Control, failed to guarantee water-soluble ammonia equivalent of nitrogen on any of their samples which fell into our hands this season, together with the number of samples analyzed:—

| Name and Address of Company or Subsidiary. | No. of Samples |
|--|----------------|
| Acme Mfg. Co., Wilmington, N. C. | 1 |
| American Cotton Oil Co., Greenville | 2 |
| Batesburg Cotton Oil Co., Batesburg | 5 |
| Cheraw Oil Mill, Cheraw | 1 |
| Etiwan Fert. Co., Charleston | 4 |
| Farmers' Fert. Co., Sumter | 6 |
| Gilbert Fert. Co., Gilbert | 1 |
| Greenville Fert. Co., Greenville | 1 |
| Greer Fert. Co., Greer | 2 |
| MacMurphy Co., Charleston | 7 |
| Merchants' Fert. and Phos. Co., Charleston | 1 |
| Orangeburg Fert. Co., Orangeburg | 1 |
| Rock Hill Fert. Co., Rock Hill. | 1 |

| Name and Address of Company or Subsidiary. | No. of Samples |
|--|----------------|
| Southern States Phos. & Fert. Co., Augusta, Ga. | 2 |
| Spartanburg Fert. Co., Spartanburg. | 2 |
| Trenton Fert. Co., Trenton | 2 |
| Victor Cotton Oil Co., Gaffney | 1 |
| Westminster Oil and Fert. Co., Westminster | 2 |
| | — |
| | 42 |

In the following table are given the names of the thirteen companies or subsidiaries, all of whose samples were guaranteed in water-soluble ammonia equivalent of nitrogen, together with the number of samples analysed:—

| Name and Address of Company or Subsidiary. | No. of Samples |
|---|----------------|
| B. G. Pringle & Co., Charleston | 1 |
| Catawba Fert. Co., Lancaster | 10 |
| Charleston Import & Forwarding Co., Charleston | 1 |
| Chatham Chemical Co., Savannah, Ga. | 6 |
| Columbia Guano Co., Norfolk, Va. | 1 |
| Congaree Fert. Co., Columbia. | 10 |
| G. Ober & Sons, Savannah, Ga. | 4 |
| Goodrich Guano Co., Richmond, Va. | 1 |
| Hartsville Fert. Co., Hartsville | 1 |
| Navassa Guano Co., Wilmington, N. C. | 5 |
| Powhattan Chemical Co., Richmond, Va. | 1 |
| Venable Fert. Co., Richmond, Va. | 2 |
| Wulbern Fert. Co., Charleston, S. C. | 1 |
| | — |
| Total | 44 |

In the following table are given the names and addresses of twenty companies, or subsidiaries, of whose goods ten or more samples were received for analysis. There are also given the number of samples of each company, the number of samples guaranteed in water-soluble ammonia, the water soluble ammonia guarantees—(per cent of total ammonia guaranteed) the number of samples which met the requirements of the Board of Fertilizer Control, and the per cent of water-soluble ammonia equivalent of nitrogen found:—

| Name and Address of Company | No. of Samples | No. Samples Guaranteed | Water-Sol. Guaranteed | No. Passed | Found Per Cent |
|---|-------------------|---------------------------|--------------------------|---------------|---|
| Am. Agr. Chem. Co., Charleston | 23 | 20 | 50 | 0 | Seven—75-79 Eleven—80-87 Two—80-89 |
| | | | 66 | 0 | |
| Am. Fert. Co., Norfolk, Va. | 12 | 6 | 25 | 0 | Two—78-88 Three—91-95-95 |
| | | | 70 | 1 | 73 |
| Armour Fert. Works, Atlanta, Ga. | 22 | 16 | 75 | 16 | 75-91 |
| Ashepoo Fert. Works, Charleston | 17 | 15 | 50 | 2 | Nine—80-87 One—74 |
| | | | 66 | 0 | 85 |
| | | | 85 | 1 | One—67 |
| Catawba Fert. Co., Lancaster | 10 | 10 | 50 | 0 | Three—79-89 |
| | | | 60 | 2 | Five-81-88 |
| Chiquola Fert. Co., Anderson | 11 | 6 | 50 | 4 | One—90 |
| | | | 75 | 0 | 57 |
| Coe-Mortimer Co., Charleston | 18 | 10 | 50 | 0 | Eight—72-86 |
| | | | 66 | 0 | Two—86-87 |
| Congaree Fert. Co., Columbia | 10 | 10 | 50 | 1 | Six—69-77 |
| | | | 37.50 | 0 | 76 |
| | | | 75 | 1 | One-98 |
| Fisheries Products Co., Wilmington | 23 | 11 | 50 | 2 | Three—68-69 Three—72-77 Three—85-95 |
| Georgia Chem. Works, Augusta, Ga. | 18 | 10 | 25 | 0 | Eleven—91-98 Five—69-88 |
| International Agr. Corp., Spartanburg | 10 | 3 | 50 | 0 | 88, 72, 72 |
| Palmetto Guano Corp., Columbia | 14 | 10 | 50 | 0 | Four—77-78 Three—80-86 |
| | | | 41.66 | 0 | 79 |
| | | | 60 | 0 | 83 |
| | | | 66 | 0 | 83 |
| Planters' Fert. & Phos. Co., Charleston | 18 | 18 | 50 | 4 | Five—71-76 One—89 |
| | | | 70 | 3 | 54, 65, 73 |
| Richmond Guano Co., Greenville | 11 | 10 | 33.33 | 0 | Four—66-88 |
| | | | 50 | 3 | Three—81-87 |
| Royster (F. S.) Guano Co., Norfolk, Va. | 41 | 32 | 33 | 0 | Two—74, 79 |
| | | | 33.33 | 0 | Two—94, 95. Six—80-89 Nine—71-78 Ten—61-68 |
| | | | 50 | 1 | Two—69-74 |
| Southern Cotton Oil Co., Charleston | 20 | 13 | 50 | 6 | Two—70-72 |
| | | | 60 | 0 | 85 |
| | | | 66 | 2 | One—81 |
| | | | 67.7 | 1 | 71 |

| Name and Address of Company | No. of Samples | No. Samples Guaranteed | Water-Sol. Guaranteed | No. Passed | Found Per Cent. |
|---|-------------------|---------------------------|------------------------------|--------------------------|---|
| Southern Fert. & Chem. Co., Savannah, Ga..... | 19 | 7 | 33.33 50 60 | 0 0 0 | Four—76-84 81 Two—74-80 |
| Sumter Fert. Mfg. Co., Sumter | 27 | 20 | 60 70 | 1 19 | 63 Four—67-78 Fifteen—81-84 |
| Swift & Co. Fert. Works, Atlanta, Ga. | 17 | 9 | 50 60 80 100 | 0 3 0 0 | Two—82, 83 Two—77, 84 68 79 |
| V. C. C. Co., Charleston | 33 | 25 | 25 50 60 75 | 0 0 0 0 | Two—77, 78 Four—77, 78 Five—80-95 Nine—82-88 77 Three—85, 89, 93 98 |

While the figures in the foregoing table speak for themselves, it is noteworthy that where the guaranteed water-soluble was below fifty per cent. the greatest discrepancies between the found and guaranteed water-soluble ammonia equivalent of nitrogen appear. It is also worth mentioning that last season the sixteen companies or subsidiaries of whose goods we had ten or more samples, representing 313 samples in all, only 80, or 25.55 per cent. were guaranteed, while this season the twenty companies, of whose goods we had 379 samples, and who each had ten or more samples, 262 samples were guaranteed in water-soluble ammonia, or about 69.13 per cent.

The nitrogen availability standards for the coming season are the same as they have been for the past seven years, and are as follows:—

“1st. The Modified Neutral Permanganate Method of Street is still in force.

“2nd. An unmixed fertilizer material furnishing organic nitrogen must show an availability of 85 per cent. of the total organic nitrogen found on analysis.

“3rd. The water-insoluble organic nitrogen in mixed fertilizers must show an availability of 75 per cent. by Street's method, if this water-insoluble organic nitrogen amounts to one-third or more of the total nitrogen found on analysis.”

Five hundred and twenty-three mixed ammoniated fertilizers were examined for water-insoluble organic nitrogen, of which 120 samples were found to contain water-insoluble organic nitrogen amounting to one-third or more of the total nitrogen found on analysis. All of these 120 samples were examined by Street's method and were found up to the requirement of 75 per cent. availability. Last season there were 100 such samples out of 502 mixed ammoniated fertilizers, and all were found up to the requirements. These results are very gratifying and leave no ground for complaint as to the quality of the organic

ammoniates being used by manufacturers in their mixed goods, at least so far as the goods which have fallen into our hands are concerned. It is evident, however, that there has been a marked falling off in the use of organic ammoniates, and that highly soluble inorganic ammoniates are being much more freely used, on account probably of the high cost of organic ammoniates for fertilizing purposes, due in large measures to their increased use as stock feeds.

Farmers' Samples of Fertilizers:—In addition to the official fertilizer samples collected by inspectors, there have been analyzed this season forty-seven samples for purchasers, as provided for in Section 17 of the new fertilizer law, effective July 1st., 1920.

Waters:—Of the 84 samples of water listed, 12 were sanitary analysis of the Barracks spring and 12 of the standpipe water, regular monthly analyses of the college water supply; 57 were sanitary analyses, and 3 were complete mineral analyses for citizens of the State.

Ores, Minerals, Etc.:—Forty-seven specimens of clays, micas, quartz iron pyrites etc. were received and examined this season, the same in number as last season.

Limestones, Marls, and Lime:—Six samples of materials of this nature were analysed this season, being one more than last season.

Assays for Gold and Silver:—Eight samples were assayed this season as against two last season.

Ashes:—Only one sample was received for analysis this year, and none last year.

Miscellaneous:—The thirty samples listed above consisted of:—one each, abbatoir product, iron ore, corn and cob meal, cattle food alcohol, turpentine, water for oil, denatured alcohol; two each, peat, "raking," silage, check work for other laboratories; three samples, collaborative work with the Association of Official Agricultural Chemists; four soils; seven specimens in cases of suspected poisoning of human beings, as provided for by the laws of the State.

Distribution of the Work:—The fertilizer analyses were made by Messrs. Robertson, Foy and Freeman, the samples prepared for analysis by Mr. L. J. Gunter.

Practically all of the miscellaneous samples were examined by Mr. B. Freeman, except the seven toxicological analyses, which were made by Mr. B. F. Robertson.

All of the nitrogen work, including total, water-soluble, and availability determinations were made by Mr. Robertson, who was assisted in the availability work by Mr. Gunter.

All of the samples of water were analysed by Mr. Freeman, except 17 samples by Mr. Foy and 1 sample by Mr. Robertson. Mr. Freeman made analyses of limestone and the like, also of gold and silver.

It gives me pleasure to be able to say that all of the work has been faithfully and efficiently performed, and that complete harmony and the most hearty co-operation have prevailed throughout the year, as it was my privilege to report last year.

Respectfully,

R. N. Brackett, Chief Chemist.

Report of the State Entomologist

Dr. W. M. Riggs, President, Clemson Agricultural College,
Clemson College, South Carolina.

Dear Sir:

We submit herewith the annual report of the work of the South Carolina State Crop Pest Commission for the fiscal year ending December 31, 1922. For convenience the work is reported under the following headings:

1. **Intrastate Nursery Quantantine:** This pertains to the regulation governing the transportation or movement of nursery stock within the state of South Carolina.

2. **Interstate Nursery Quarantine:** This regulates the transportation or movement of nursery stock into the state of South Carolina.

3. **Intrastate Sweet Potato Quarantine:** This pertains to the regulation of the transportation of sweet potatoes, sweet potato plants and parts of plants within the state of South Carolina.

4. **Interstate Sweet Potato Quarantine;** This governs the transportation or movement of sweet potatoes, sweet potato plants or parts of plants into the state of South Carolina.

5. **Cabbage and Tomato Plant Quarantine.**

6. **Boll Weevil Work.**

7. **Mexican Bean Beetle.**

8. **Pests Threatening South Carolina.**

9. **Miscellaneous Insects and Diseases.**

Due to the increased interest in the development of nurseries within the state, the demands made upon the State Crop Pest Commission for this part of the work were much greater than heretofore. The proper operation of a nursery is a technical business in which one may not expect to succeed until he becomes familiar with the necessary technic. The nurseries in this state during the past year have given us trouble, due to infestation by one pest or another. The principal pests with which we had to deal were scale, root louse, crown gall and root knot. The latter two pests constitute a serious disturbance requiring most careful attention. In operating this service this Commission pursued its well known policy of helpfulness. Sometimes it is necessary in the performance of our duties to cause loss to our growers, but whenever such loss can be avoided by reasonable assistance no efforts are spared to help the nurserymen or the growers of the plants. In the case of scale one of the standard control measures is carried out and in addition to this the trees are fumigated before they are certified. In case of root louse the trees are dipped in a nicotine sulphate solution consisting of a pint of nicotine sulphate, fifty gallons of water and the

soapsuds made by dissolving two pounds of good laundry soap, that does not contain coal tar or naptha, in a little hot water.

In nurseries where crown gall or root knot has not become general but is confined to spots, an inspector of this Commission is on the grounds during the digging period and personally inspects every tree when it is dug and eliminates at that time every tree that shows any sign of being infected with either of these pests.

A list of nurseries active within this state and to which certificates were granted follows:

Greenville Nursery Company, Greenville.

J. P. Taylor, Greer.

R. F. Watson, Greenville.

W. T. Adams, Greenville.

R. Bates, Jackson.

Palmetto Nurseries, Florence.

Evergreen Nurseries, Conway.

M. O. Dantzler, Orangeburg.

F. E. Ellis, Level Land.

W. J. Wilson, Columbia.

H. Mellott, Shelton.

W. M. Altman, Blackville.

J. M. Bell, Walhalla.

Miss Maggie Bell, Walhalla.

J. M. Craig, Pendleton.

R. L. Darnall, Williamston.

W. W. Watson, Orangeburg.

M. H. Hunter, Laurens.

R. D. Mconald, Westminster.

J. W. Wood, Duncan.

Lone Star Nursery, Spartanburg.

Rufus Fant, Anderson.

Pine Hurst Tea Farms, Summerville.

Geo. Baldwin, Columbia.

The greeohouses of the various floral companies of the state are inspected periodically and where it is necessary certificates are issued. This is only required where the greenhouse deals with certain woody shrubs or trees or certain kinds of herbaceous flowering plants.

A list of the greenhouses so inspected follows:

Laurens Street Greenhouse, Camden.

F. F. & F. L. Aichle, Charleston.

Mrs. J. M. Eison, Columbia.

Eau Claire Greenhouses, Columbia.

Chas. A. Moss, Spartanburg.

Miss Annie Addison, Greenville.

Mauldin Floral Company, Greenville.

Greenville Floral Company, Greenville.

Graceland Cemetery and Floral Co., Greenville.

Spartanburg Floral and Truck Co., Spartanburg.

Fant's Greenhouse, Anderson.

The Wales Garden Greenhouse, Columbia
Magnolia Floral Co., Charleston.
Hite Floral Co., Aiken.
Rose Hill Greenhouse, Columbia.
Charleston Floral Co., Charleston.
Carolina Floral Co., Charleston.
DeWitt House, Florence.

Certificates issued to any of these nurseries or greenhouses are consecutively numbered and each nurseryman or shipper is held accountable to this Commission for their use. Unused or mutilated tags must be returned. It is furthermore required that invoices of all shipments moving into this state or within the state be furnished this Commission immediately after stock has been shipped. These invoices are required to show the kind of stock, the quantity, its destination and also the number of certificate in each case under which the shipment is made. These invoices are classified in the office of the Commission, which enables the inspectors to determine without delay the distribution of the output of any nursery shipping into or within the state. Besides this valuable information it serves a still greater purpose whenever an infested shipment is intercepted; this enables the inspectors of the Commission to determine other possible points to which such infestation may have been shipped and which may form possible centers of infestation. In the absence of these invoices it would be practically impossible to locate such points and infestation could spread indefinitely before it would be discovered.

Until there develops a very decided increase in the development of the nursery business within the state we may continue to expect that the bulk of nursery shipments is from outside of the state of South Carolina. The following list of nurseries arranged alphabetically according to states will give one an approximate idea in regard to interstate shipments.

ALABAMA:

Chase Nursery Company, Chase.
Empire Farm & Nursery Co., Baileytown.
Fraser Nursery Co., Huntsville.
Fraser Nursery Co., Inc., Birmingham.
Huntsville Wholesale Nursery, Huntsville.

CALIFORNIA:

California Nursery Co., Niles.

FLORIDA:

Commercial Nursery Co., Monticello.
Howard-Hickory Co., Monticello.
Harlan Farms Nurseries, Paxton.
Interstate Nurseries, Macclenny.
J. Van Lindley Nursery Co., Monticello.
Lamar Pecan Groves, Monticello.
Monticello Nursery Co., Monticello.
Royal Palm Nurseries, Oneco.

Simpson Nursery Co., Monticello.
Florida Nurseries, Monticello.
Summitt Nurseries Bros., Monticello.
Campville Nurseries, Orange Heights.
Glenn St. Mary Nursery Co., Glenn St. Mary.

GEORGIA:

Ashford Park Nurseries, Atlanta
Concord Nurseries, Concord.
Cureton Nursery, Austell.
C. A. Dahl & Co., Atlanta
Georgia Nursery Co., Concord.
Hogansville Nurseries, Hogansville
LaFayette Nurseries, LaFayette.
Magnolia Nursery, Cairo.
Sigmund Tarnok Co., Inc., Augusta.
Smith Bros. Nursery, Concord.
B. W. Stone Nursery, Thomasville.
Southern Nut Tree Nurseries, Thomasville.
Thomasville Nurseries, Thomasville.
Barrow County Nursery, Atlanta.
Pine Mountain Nursery, Shiloh.
M. W. Reed, Augusta.
J. B. Wight, Cairo
Altamaha Nursery, Ludowitch.
Dept of Horticulture, Athens.
H. G. Hastings Co., Atlanta.
G. M Bacon Pecan Groves, DeWitt
C. C. Dorn Co., Augusta.
J. H. Girardeau, McRae.
Lone Star Gardens, Thomasville.
Carrollton Nurseries, Carrollton.
Dixie Wholesale Nurseries, Marietta.

ILLINOIS:

D. Hill Nursery Co., Dundee.
Vaughn's Seed Store, Western Springs.
Naperville Nurseries, Naperville.

INDIANA:

R. M. Kellogg, Poseyville.

IOWA:

Mount Arbor Nurseries, Shenandoah.
Shenandoah Nurseries, Shenandoah.

MASSACHUSETTS:

R. & J. Farquar Co., Boston.

MARYLAND:

Harrison Nurseries, Berlin.
Franklin Davis Nurseries Co., Millikin.

MICHIGAN:

Chester G. Campbell, Paw Paw.

MISSISSIPPI:

Bechtel Pecan Nurseries, Ocean Springs.
I. E. Bass Pecan Co., Lumberton.
Miss Bannie Keenum, Armory.
Mrs. Sallie Lewis, Starksville.
F. T. Mullikin, Kossuth.
United States Nursery Co., Roseacres.
Oceans Springs Pecan Nursery, Ocean Springs.
Biloxi Nurseries, Biloxi.
Interior Nurseries Co., Perkinston.
A. A. Pigford, Lumberton.
R. I. Viera, Oceans Springs.

MISSOURI:

Neosho Nurseries, Neosho.
Stark Bros. Nurseries and Orchard Co., Louisiana.

NEW JERSEY:

Henry A. Dreer, Riverton.

NEW YORK:

Federal Nurseries, Rochester.
Kelly Bros. Wholesale Nurseries, Danville.
T. S. Hubbard Co., Fredonia.
Jno. Lewis Childs, Floral Park
First National Nurseries, Rochester.
Mayo Nursery Co., Rochester.
H. S. Taylor & Co., Rochester.
Glen Bros., Inc., Rochester.
Woodlawn Nurseries, Rochester
L. W. Hall & Co., Rochester.
W. F. Brow, Rose Hill.
Van Dusen Nursery, Geneva.
F. R. Pierson, Tarrytown.
Green's Nursery Co., Rochester.
Vick & Hill Co., Rochester.
James Vick's Sons, Rochester.
W. T. Smith & Co., Geneva.
Hicks Nurseries, Westbury.
Jackson & Perkins Co., Newark.
T. W. Rice, Geneva.
Lewis Roesch, Fredonia.

NORTH CAROLINA:

Deaton Nurseries, Vass.
Catawba County Nursery, Newton.
Continental Plant Co., Kittrell.
Audubon Nurseries, Wilmington.
W. A. Myatt, Jr., & Co., Raleigh.
Newton Nurseries, Newton.
Valdesion Nurseries, Boston.
Howard-Hickory Co., Hickory.

Killian Nursery, Newton.
 Greensboro Nursery, Greensboro.
 J. Van Lindley Nursery Co., Pomona.

OHIO:..

W. N. Scarff & Sons., New Carlisle.
 Fort Payne Nursery Co., Fort Payne.
 Wagner Park Nurseries, Sidney.
 Ella Baines, Springfield.
 Joseph F. Martin Nursery, Painesville.
 Great Western Plant Co., Springfield.
 Good & Reese Co., Springfield.
 Henry Kohankie, Painesville.
 Templin-Crockin Bradley Co., Cleveland.
 Spring Hill Nursery, Tippecanoe City.
 American Rose & Plant Co., Springfield.
 Maple Bend Nurseries, Perry.
 Miami Valley Nursery, Tippecanoe City.

PENNSYLVANIA:

W. H. Moon Co., Morrisville.
 Thomas B. Meehan Co., Dresher.

TENNESSEE:

Howell Nurseries, Knoxville.
 Curberland Nurseries, Winchester.
 Forest Nursery Co., McMinnville.
 Bildad Nursery Co., Smithville.
 Tennessee Nursery Co., Cleveland.
 Joe Shadow Nursery Co., Winchester.
 Southern Nursery Co., Winchester.
 Marble City Nursery Co., Knoxville.
 Commercial Nursery Co., Dechard.
 Cedar Hill Nursery Co., Winchester.
 Chattanooga Nursery Co., Chattanooga.
 Oakland Nursery Co., Columbia.
 Shahan Bros., Winchester.
 Parsley Bros., Smithville.
 Washington Heights Nurseries, Knoxville.
 John Lightfoot, Chattanooga.

TEXAS:

Munson Nurseries, Denison.

VIRGINIA:

Old Dominion Nurseries, Richmond.
 Virginia Nurseries, Richmond.
 Titus Nurseries, Waynesboro.

The past season has developed great activity in dealing with certain phases of interstate movement of nursery stock. It has long been known to be a common practice for some nurserymen to make contracts for certain varieties of stock and then fill the order by substituting

other varieties. Generally this act is not discovered until the trees come into bearing, thus causing much disappointment and in some cases material losses. The General Assembly at its last session amended the Crop Pest Act, thereby giving power and authority to the South Carolina State Crop Pest Commission to make, promulgate and enforce rules and regulations to protect purchasers of nursery stock against fraud and misrepresentation. How to deal with this problem has been a matter of discussion by quarantine officials and nurserymen for years and so far there seems not to have been found a practical solution of the problem. We may start out with the assumption that the shipping of varieties other than those called for in the contract is not practiced by the majority of nurserymen who are scrupulous and honorable men. To deal successfully with the unscrupulous element must be based on cooperation between nursery quarantine officers and the national and sectional associations of nurserymen.

In some states an effort is made to eliminate this practice thru the operation of receiving stations having for their ultimate aim the inspection of plants at destination. This Commission is of course not financially able to consider seriously such a plan for this state, even were it deemed the best. In order to meet this obligation imposed upon it by the Legislature the Commission adopted a series of regulations last July providing that all non-resident nurserymen and shippers file with some resident of South Carolina acceptable to this Commission their power of attorney to receive service of process, in case suit is brought against them. At that time the nursery stock market and the convictions of nurserymen were such that the immediate operation of this plan appeared detrimental to the plant interests of South Carolina. At that time there was a scarcity of certain plants which the state needed most while failure to meet this requirement by nurserymen would have created a handicap to our people, that would have been detrimental. In order to compromise this matter for the best interest of all concerned the proxy requirement was made optional, placing the responsibility on the purchaser, the Commission assuming obligation for fraud and misrepresentation only where purchases were made from non-residents who had their representatives in this state to receive service of process. After this entire matter had been gone over with great care the situation gradually composed itself and another season we believe that there will be no difficulty in enforcing a regulation providing for a proxy.

Furthermore the requirements made upon local dealers are such that the practices of the unscrupulous tree dealers are becoming hazardous.

Owing to the rapidly developing sweet potato industry in this state it greatly increased the responsibility of this Commission in its effort to protect this industry against the introduction and spread of dangerous insects and diseases. In previous reports we have emphasized the great danger of having introduced into this state the sweet potato root borer, while there are several serious sweet potato diseases against which purchasers of sweet potato plants or sweet potatoes for prop-

agating purpos should be adequately protected. Owing to the fact that such a large part of the sweet potato movement is into the state, this Commission found it necessary to operate the intrastate and the interstate separately. In several instances the wilt had been introduced in the past and every effort is now being made to keep this pest from spreading within the state. It is for this reason that regulations were adopted covering the inspection of the sweet potatoes in the field and in the storage house in fall and winter, in addition to the inspection of the sweet potato plants in the beds before they are sold. The regulations of this Commission governing the transportation and movement of sweet potatoes, sweet potato plants and parts of plants within the state are hereunto appended.

As already stated, a large portion of the plants moved within the state come from points outside of South Carolina. This makes the problem more difficult because it requires that we deal with the sweet potato root borer in addition to the wilt and rots. This Commission makes the same requirements in regard to shipments from other states that it does in regard to potatoes grown and shipped within South Carolina. With the further development of the sweet potato industry and the increased number of sweet potato plants shipped into the state the situation grows more serious and the Commission feels it to be its obligation to enforce these regulations so as to secure the best possible protection for our citizens. Fortunately there is no evidence that the sweet potato root borer has reached South Carolina at any point. A list of shippers of sweet potatoes and sweet potato plants follows:

S. J. Thompson, Greenwood, S. C.

Jas. W. Mellard, Jedburg.

D. F. Jamison, Summerville.

D. F. Holt, Wateree.

G. W., Gignilleat & Son, Seneca.

Hull Plant Farm, Rock Hill.

H. G. Davis, Marion.

J. D. Platt, Georgetown.

J. B. Hill, Ware Shoals.

R. B. Godgion, Williamston.

W. Lykes, Lykesland.

B. Gillespie, Conway.

W. F. Hucks, Conway.

B. H. Martin, Conway.

W. O. Davis, Conway.

W. H. Mixon, Charleston.

A. L. Welch, Charleston.

E. L. Rivers, Charleston.

G. T. Asbill, Ninety Six.

J. W. Andrew, Oswego.

R. Walker Brice, Weddelfield.

Geo. A. Dekay, Georgetown.

J. E. Durant, Lynchburg.

J. Elbert Davis, Davis Station.

Finklea & Ivey, Winona.
L. I. Guion, Lugoff.
L. D. Jennings, Sumter.
Mrs E. L. Kinard, Greenwood.
E. W. Kaminski, Georgetown.
Geo. B. Kirkland, Millettville
J. L. Mayer, Greenwood.
Marion Sweet Potato Storage Co., Marion.
G. H. McCutcheon, Bishopville.
W. Muchison, Dillon.
R. I. Manning, Bishopville.
Mullin Plant Farm, Fort Mill.
S. M. McCoy, Oswego.
Planters Produce & Storage Co., Florence.
E. J. Rhodes, Greenwood.
J. H. Robinson, Oswego.
Dr. Wade Stackhouse, Dillon.
W. M. Sawyer, Johnson.
F. C. Thomas, Manning.
E. A. Terry, Oswego.

Cabbage and tomato plant inspection proceeded in the same manner as heretofore except that an amendment was made to the regulations which is of great assistance to the large growers in tagging their shipments. This refers especially to the numerous mail order packages which do not conveniently accommodate the standard tag. Arrangements were completed so that there is issued to the grower a rubber stamp containing the necessary wording to comply with the regulations and enabling the shipper to stamp his permit on the package with the least amount of time and labor involved. A list of dealers in cabbage and tomato plants certified by this Commission follows:

R. L. Darnall, Williamston.
D. F. Jamison, Summerville.
Thos. J. Jackson, Orangeburg.
W. Lykes, Lykesland.
Jas. W. Mellard, Jedburg.
Fred M. Martin, Pendleton. z
T. Weller, Columbia.
John Laird, Aiken.
Piedmont Plant Co., Greenville.
Belk & Co., Lake City.
M. D. Aycock, Wedgefield.
W. J. Nunnery, Wedgefield.
J. D. Platt, Georgetown.
T. S. Crawford, Mt. Pleasant.
W. C. Kennerty, Johns Island.
H. J. Ayscue, Mt. Pleasant.
Geo. L. Sands Plant Co., Johns Island.

Johns Island Plant Co., Johns Island.
Peddy Plant Co., Meggett.
Rivers Wholesale Plant Co., Meggett.
Geo. Sands, Rantowles.
C. J. & C. Whaley, Martins Point.
F. W. Towles, Martins Point.
W. R. Hart, Martins Point.
H. S. Whaley, Martins Point.
Meggett Plant Co., Meggett.
J. C. Wilson Co., Meggett.
C. F. Hethington Co., Meggett.
Carr-Carlton Co., Meggett
S. M. Gibson, Younges Island.
W. C. Geraty Co., Younges Island.
E. B. Commins, Meggett

Owing to the vital importance of the boll weevil problem in the welfare of this state every possible assistance was given during the past year in the control of this pest. In order to make this work as effective as possible the Crop Pest forces joined their efforts with those of the Experiment Station, the Extension Division and Agricultural Department. Every phase of the problem which gave promise in helping to alleviate the situation in 1922 was canvassed. The special feature of this work covered by the Crop Pest Commission was that of distribution thruout the several sections of the state, which is an important factor in estimating the probable damage and in advising proper procedure to meet the situation. The occurrence of this pest is always more or less erratic, not only with reference to the different sections of the state, but with reference to communities and localities as well.

Possibly the most important service rendered in this connection was the assistance given to farmers to enable them to determine infestation from time to time as a guide to poisoning as well as cultural operations.

The specialists of this Commission assisted shippers of cotton seed in the fumigation to enable them to ship their seed to sections where quarantines are still in force.

The surprise of the season was the comparative inactivity of the Mexican bean beetle, introduced in the fall of 1920. This pest came into the state at a point in upper Oconee County, covering only a few square miles late in the fall of 1920. In 1921 it swept over Oconee, Anderson, Pickens and parts of Greenville County. Judging from its ability to spread over a great area of country exhibited in 1921, this Commission was prepared to expect that this pest would cover a large portion of the Piedmont section in 1922. The spread during this past season however is practically confined to the four upper counties of Oconee, Pickens, Anderson and Greenville.

As reported in our last report, the Mexican bean beetle should be regarded as a most serious pest threatening for the time being at least the successful production of our most important leguminous crops. Unfortunately no satisfactory method of controlling this pest has yet been

devised. The legumes have not the resistance to arsenicals as cotton and other hardier plants.

Progress has been made in the control of this pest by the use of a mechanical mixture of calcium arsenate and hydrated lime. These investigations are being continued in the hopes of finding a simple, practical and economic control measure.

Among the serious pests threatening to invade this state sooner or later are the pink boll worm, the sweet potato root borer, the European corn borer, the Japanese beetle, the browntail and gypsy moth. There are numerous other serious pests in foreign countries that must be guarded against, but the list here given constitute those species which are already in the country and are spreading over more territory from year to year. The pink boll worm situation at this time is probably more encouraging than it has been heretofore. Due to the splendid efforts of the Federal Horticultural Board and the excellent cooperation given by the states, it appears that this pest was kept from spreading in 1922. It is the ultimate aim to eradicate this species from Texas and Louisiana. The first step in the eradication of the pest must necessarily be to prevent its spread, because no eradication would be possible so long as the spread cannot be controlled. Superb efforts are warranted on the part of the Federal and State agencies in preventing the spread of this pest and ultimately to accomplish its eradication, as this species is probably the worst cotton pest in existence. Were this pest to spread over the cotton belt and add its damages to that already sustained by the boll weevil it would create a condition in cotton production gloomy indeed.

The sweet potato root borer made no progress in 1922, while eradication work carried on by the Federal Government in cooperation with the states warrants the most active support. Altho the sweet potato weevil has wings, so far it has made very little active use of them and does not depend on its wings in its migratory movements. This must be regarded as an important advantage in any efforts at its eradication.

The brown tail and gypsy moth are practically confined to the New England area and have made no important progress toward the South, while the Japanese beetle has been confined to a small area in New Jersey and Pennsylvania, bordering on the Delaware River.

The European corn borer situation is hardly as satisfactory, as this pest has spread westward and southward more or less. Besides the restricted area in eastern New England and the area in eastern New York heretofore reported, it has spread over western New York along a narrow belt along the shore thru northern Ohio.

RECOMMENDATIONS: Owing to the adoption of the new regulations requiring more frequent and thorough inspections, very important information has been secured in regard to diseases. This information does not cover only localities where diseases have been found to exist but it also enables the officers of the Commission to determine the probable sources of these infestations in other states. Altho the

transportation of cabbage and tomato plants is more or less local, the shipment of nursery stock from other states is very heavy and comes from many miscellaneous sources. The heaviest movement of sweet potato plants is from Florida and Georgia. The duplicate invoice requirements will be extended so as to cover the shipment of sweet potato plants and sweet potatoes for propagating purposes, because the work of the past year more than ever before has shown the great value of having this information on file. In nursery inspection work we found six cases where the trees were infested with crown gall. Whenever such a shipment is discovered the duplicate invoice file is consulted to determine to what other points in the state such nursery has made shipments, because when a nursery has shipped crown gall to one point there is good ground for suspicion that this disease may have been carried in stock shipped to other points. In this manner the source of the trouble can be determined and necessary quarantine measures instituted to prevent further shipments from such sources. In two of the nurseries root knot was found. In one case it was localized and all stock that showed signs of infestation was destroyed, while the disposition of the other case has not yet been determined, as the stock has not yet been dug up for transportation.

In our sweet potato inspection service we have to deal with several of the injurious diseases and the situation is becoming more serious. The inspection records show ten cases of black rot, two cases of dry rot, one of soft rot, one of Southern blight and four of wilt. These cases are now being carefully investigated and the growers from whom plants have been shipped in other states are under investigation in cooperation with the authorities of the state of origin. This situation has been the principal inducement to make the requirements of sweet potato shippers outside of the state the same as those inside of South Carolina. It is the intention of this Commission to enforce these regulations with the greatest thoroughness, even if it amounts to practically the entire prohibition of sweet potato plants from points outside of the state. In view of the situation here described it becomes apparent that home production of nursery stock and other plants for propagating purposes should receive every encouragement. Nursery development in the state is progressing, but altogether too slowly, while there is no reason why this state should not produce the great majority of its own sweet potato, cabbage and tomato plants for propagating purposes.

It is recommended therefore that this work be prosecuted along the lines already developed and here presented; and that the new regulations adopted for the further protection of our citizens be enforced with the greatest possible thoroughness.

The duties required under the Bee Disease Act were carried on in close cooperation with the Extension Service, Mr. E. S. Prevost making the required inspections. This service is divided into two phases; first, the inspection of bee yards within the state whenever there are reasons to suspect the occurrence of any of the brood diseases; second,

the inspection of bee yards to enable them to make shipments of queen bees and package bees to their markets governed by laws of other states. The requirements of this service are continually increasing, owing to the very rapid development of the beekeeping industry in this state. Our bee yards of the state must be protected against the introduction of the destructive bee diseases which occur practically in every state except South Carolina. The fact that these diseases have not been found in South Carolina gives especial responsibility to this Commission. The activities in queen rearing are greatly increasing, while there is every reason to believe that the package bee business alone will develop into an important source of revenue in the future.

It is recommended that this phase of the service be continually supported to protect beekeeping as a source of important food supply, besides a valuable revenue to the state under boll weevil conditions.

Respectfully submitted,

A. F. CONRADI,

State Entomologist.

H. W. BARRE,

State Pathologist.

Regulations of the South Carolina State Crop Pest Commission Governing the Transportation and Movement of Sweet Potato Tubers, Sweet Potato Plants, Vines, Cuttings, Etc., Into and Within the State of South Carolina.

Reg. SP.-1. All persons desiring to sell, barter or give away sweet potatoes for seed purposes or who expect to bed sweet potatoes for the purpose of selling plants must have made at least three inspections by the State Crop Pest Commission and must file an affidavit made out in proper form before a permit shall be issued.

First Inspection: The first inspection shall be made while the crop is in the field, preferably the latter part of August and during September. During this inspection especial attention is given to stem rot or wilt.

Second Inspection: The second inspection is made sometime during storage. During this inspection especial attention is given to black rot.

Third Inspection: This is an inspection of the beds and is made soon after the plants come up.

Other inspections may be made when in the judgment of the Commission it is deemed necessary.

Reg. SP.-2. An affidavit is required setting forth;

(a) That the sweet potatoes were or will be dipped before bedding in a solution of corrosive sublimate (bichloride of mercury) for ten minutes. This solution is made up by adding one ounce of corrosive sublimate to eight gallons of water.

(b) That the sweet potatoes were or will be bedded in soil that had never been planted in sweet potatoes, That the bed is well drained

and located so as to not come in contact with drainage water from barn yards, sweet potato houses and sweet potato banks.

(c) That all frames which had been used for bedding sweet potatoes before were or will be cleaned out thoroughly and disinfected with a solution of formaldehyde made up by adding one pint of formalin to thirty gallons of water. That all tools employed were or will be disinfected with a solution of the same strength.

(d) That no stable manure used in supplying heat for the bed has or will be taken from stock which has been feeding on sweet potatoes or sweet potato vines.

Where manure is used it should not be mixed in with the soil with which the potatoes are covered.

Reg. SP.-3. Sweet potatoes transported into the state of South Carolina from Florida, Georgia, Alabama, Mississippi, Louisiana or Texas must be accompanied by a sweet potato permit issued by the South Carolina State Crop Pest Commission. This regulation will apply to other states that may become infested with sweet potato root borer. (*Cylas formicarius*, Oliv.)

This permit is issued after such shipments have been certified to by a qualified official as to their freedom from sweet potato root borer.

These regulations to be in effect on and after September 1, 1922.

Report of the State Veterinarian

November 1, 1922.

Dr. W. M. Riggs, President, Clemson Agricultural College,
Clemson College, South Carolina.

Dear Sir.

I have the honor of submitting herewith a report of the Clemson College Live Stock Sanitary Office and the Bureau of Animal Industry, U. S. Department of Agriculture, cooperating, for the period from January 1, 1922 to October 31, 1922, inclusive.

The principal functions of this office are Tick Eradication, Tuberculosis Eradication, and Hog Cholera Control. In addition to these we also investigate, treat and recommend measures for the control and eradication of all reported conditions in livestock that are of a contagious, infectious or communicable nature.

TICK ERADICATION.

The principal section of the State where cattle ticks are still present is in the coastal-plain region. Satisfactory results were obtained this year in those counties and areas where the stock-law was observed, but as the law contains no provision delegating special authority for its enforcement, in a great many section no effort was made on the part of the livestock owners to confine their stock to their premises, and as a result we could not conduct our work as satisfactorily as desired. It is thought, however, that a larger percent of the farmers will arrange to observe the law next year; if so, it will enable us to accomplish even better results than we did this season.

The beneficial effects of Tick Eradication are being reflected in those sections where it is now safe to import the better breeds of cattle of both beef and dairy types, and the farmer who has taken advantage of the situation and has established a herd of beef or dairy cattle is the one who is feeling less the effects of the cotton boll weevil, and the general financial depression.

We feel safe in making the prediction that within a very few years cattle raising will be one of our principal industries.

TUBERCULOSIS ERADICATION

When this branch of our work was inaugurated during the year 1917 very little interest was manifested on the part of cattle owners in having their herds tested to determine the presence or absence of this dread disease, the importance of doing so, however, has increased each year, and at this time it is impossible for us to answer promptly the demands being made.

During the past year the tuberculin test was applied to 1,054 herds, containing 19,398 cattle, 217 of which reacted to the test and were disposed of in accordance with the State laws. Since the inauguration of the work (Nov. 1917) a total of 2,633 herds containing 54,910 cattle have been tested, 849 of which reacted to the test.

At this time 88 herds containing 2,853 cattle have been accredited in accordance with the Accredited Herd Plan rules and certified to as being free of tuberculosis; 952 herds containing 12,651 cattle have passed one successful test and are in process of Accreditation; and a total of 2,114 herds containing 19,507 cattle are under our supervision.

The question no longer being in doubt as to the transmissibility of bovine tuberculosis to the human, its eradication from our live stock is of paramount importance, from a public health as well as an economic standpoint, and no dairy products should be consumed unless same are from cattle known to be free from tuberculosis. Several cities in the State passed ordinances during the past year forbidding the sale of dairy products within such cities unless same were from cattle that had passed a successful tuberculin test and it is hoped that all other cities will do likewise and thus protect their citizens from the possibility of contracting tuberculosis from this known means of infection as well as guaranteeing them pure wholesome dairy products from healthy cattle.

HOG CHOLERA CONTROL

While hog cholera was found in several sections of the State during the past year, yet it is still most prevalent in the southern and eastern counties where the hogs are permitted to roam at large to a greater or less extent, depending upon the observance of the stock law.

The farmers did not protect their hogs with the preventive treatment as they should and as a consequence we had a few serious outbreaks, but as we have an efficient force of veterinarians stationed at advantageous points in the southern and eastern sections of the State, the outbreaks were soon under control. Our veterinarians are stationed at the following points: Denmark, Allendale, Walterboro, St. Matthews, Orangeburg, Kingstree, Georgetown, Conway, Marion and Columbia.

The following is a summary of hogs treated under our supervision against cholera during the past year and the methods employed:

| | |
|----------------------------------|---------------|
| Serum alone | 1,795 |
| Serum and Virus | 58,567 |
| Serum and bacterins | 108 |
| Serum, virus and bacterins | 390 |
| Bacterins alone | 140 |
| Total | 61,000 |

INVESTIGATIONS OF OTHER DISEASES

In addition to our major functions, viz: Tick Eradication, Tuberculosis Eradication and Hog Cholera Control, this office is charged with the duty of safe-guarding the livestock industry of the State from all contagious, infectious and communicable diseases, therefore, we are frequently called upon to investigate and treat many diseases of all classes of livestock. During the past year we have investigated the following diseased conditions, some of which are not infectious or contagious:

Cattle—Abortion, 2; abscess, 1; blackleg, 2; bloat, 1; cow pox, 1; dermatitis, 2; dietetic, 13; enteritis, 4; emaciation, 3; forage poisoning, 11; gastritis, 1; hemorrhagic septiciemia, 19; indigestion, 10; impaction, 2; laryngitis, 1; malnutrition, 4; metritis, 7; mammitis, 7; parasitism, 22; parturient paresis, 15; pneumonia, 1; peritonitis, 1; poisoning, 6; pharyngitis, 1; rabies, 7; tick fever, 15; tranumatism, 9; uricaria, 2.

Swine—Auto-intoxication, 1; botulism, 10; china-berry poisoning, 2; choke, 1; cholera, 433; constipation, 6; dietetic, 44; diarrhoea, 1; dermatitis, 1; enteritis, 1; foot rot, 1; hemorrhagic septicemia, 14; laminitis, 4; nephritis, 1; necrotic enteritis, 3; necro-bacillosis, 2; parasitism, 105; paralysis, 9; pharyngitis, 1; pneumonia, 19; poisoning, 21; rheumatism, 1; rhinitis, 1; rabies, 2; stomatitis, 1; tetanus, 2; toxemia, 1; abortion 1; traumatism, 14; tuberculosis, 4.

Horses and Mules.—Botulism, 1; canker, 1; colic, 4; dietetic, 4; emphysema of lungs, 1; impaction, 1; indigestion, 2; influenza, 3; malnutrition, 2; rheumatism, 1; rabies, 1; rhinitis, 1; traumatism, 7; tumors, 3.

Sheep and Goats.—Hemorrhagic septicemia, 2; parasitism, 5.

Dogs.—Botulism, 2; black tongue, 1; distemper, 3; parasitism, 1; poisoning, 1; rabies, 1; stomatitis, 1; traumatism, 1. Also numerous cases of "fight disease."

Poultry.—Cholera, 1; entero-hepatitis, 2.

In many instances it is necessary for our veterinarians to visit premises when it is suspected that the livestock therein are diseased, also make sanitary surveys to ascertain conditions that might tend to spread disease. They are consulted on numerous occasions by livestock owners as to the best means and methods for handling livestock problems and thus render valuable assistance in the development of the livestock industry. Our activities along these lines during the past year are shown as follows:

| | |
|------------------------------------|--------|
| Consultations and interviews | 15,040 |
| Investigations on call | 4,538 |
| Sanitary surveys | 1,745 |
| Farms visited | 6,283 |

Our veterinarians traveled a total of 52,582 miles by rail and 113,261 miles by other means in making the above investigations and observations.

Numerous inquiries pertaining to livestock diseases and conditions are received and answered by letter from the Columbia office, also valuable information is given live stock owners through the distribution of bulletins, pamphlets, etc.

SERUM, VIRUS AND BIOLOGICS DISTRIBUTION

This office carries a large stock of Anti-Hog Cholera Serum, Virus and Veterinary Biologics on hand at all times, which are furnished the citizens of the State at cost. During the past year the distribution of these products were as follows:

| | Mils | Value |
|------------------------------|----------------|--------------------|
| Anti-Hog Cholera Serum | 3,237,875 | \$37,869.20 |
| Hog Cholera Virus | 156,130 | 1,823.38 |
| *Biologics | 11,514 (doses) | 1,181.75 |
| Syringes, etc. | | 312.38 |
| Total | | <u>\$41,186.71</u> |

* The biologics distributed from this office are used for the prevention of hemorrhagic septicemia (cattle and swine), mixed infection (swine), black leg (cattle), and rabies (dogs).

DEPUTY STATE VETERINARIANS.

The arrangement perfected last year whereby the practicing veterinarians of the State were commissioned as Deputy State Veterinarians to assist this office, when necessary, in the control and eradication of contagious and infectious diseases in their respective territories, proved so satisfactory their commissions were renewed for another twelve months, effective July 1, 1922. The locations of the Deputy State Veterinarians and Assistants State Veterinarians are such they can answer calls to all sections of the State on short notice and enables us to locate, control and eradicate diseased conditions promptly.

COLUMBIA LABORATORY.

Our laboratory has been in full operation scarcely a year, yet it has proven its worth many, many times during this period. We have not only been able to confirm diagnoses made by our field men, but we have

in many instances properly diagnosed conditions that we could not have done otherwise.

In addition to the work conducted by our Columbia laboratory we hope to start research work at an early date at the College Experiment Stations, to ascertain the most practical methods for controlling and eradicating parasitic diseases from the different classes of livestock.

Since its establishment 261 examinations and investigations have been made in the laboratory. Of these, 132 were investigations of cattle diseases, 65 of hogs, 27 of chickens and turkeys, 14 of dogs, 11 of horses and mules, 9 of sheep and goats, and 3 of rabbits.

The diseased conditions for which these examinations and diagnoses were made were as follows:

Parasitic diseases, 81; infectious abortion, 31; hemorrhagic septecemia, 24; hog cholera, 19; diseases of udder and milk, 16; botulism, 13; rabies, 11; coccidiosis, 10; tuberculosis, 7; abscesses, 6; necrotic enteritis, 4; poisoning, 4; eczema, 3; entero-hepatitis, 3; scabies, 3; black leg, 2; tetanus, 2; glanders, 2; vent gleet, 2; roup, 8; chicken cholera, 2; "fright disease," 2; osteoporosis, 2; actinomycosis, 2; tumor, 1; cow pox, 1; keratitis, 1; lymphangitis, 1; pneumonia, 1; paralysis, 1; coryza, 1; emphysematous necrosis, 1.

TICK ERADICATION.

U. S. Bureau of Animal Industry Expenditures.

| Jan. 1, 1922, to Oct. | Salaries: | Incidentals: | Total: |
|-----------------------|-------------|--------------|-------------|
| 31, 1922, | \$36,457.83 | \$8,341.14 | \$44,798.97 |

Salaries: Expenditures under this heading include salaries of supervising veterinarians, a clerk, and agents in tick eradication.

Incidentals: Expenditures under this heading include traveling expenses of supervising veterinarians, agents in tick eradication, and maintenance of office in Columbia, S. C.

State Expenditures.

| Jan. 1, 1922, to Oct. | Salaries: | Incidentals: | Total: |
|---------------------------|-------------|--------------|-------------|
| 31, 1922, inclusive | \$11,068.98 | \$2,944.96 | \$14,015.94 |

Salaries: Expenditures under this heading include salaries of cattle inspectors and one clerk.

Incidentals: Expenditures under this heading include chemicals (for preparing arsenical solution to disinfect cattle), utensils and containers for same, printing regulations, quarantine and permit books, disinfection notices, etc.

The following statement shows expenditures from various sources from 1907 to October 31, 1922, inclusive:

Expenditures for Tick Eradication in South Carolina.

| | U. S. Dept. of Agri. | Clemson College | State Appropriation | County Appropri'n |
|-----------------|-------------------------|--------------------|------------------------|----------------------|
| 1907 | \$ 5125.00 | \$ 1,860.00 | ..... | ..... |
| 1908 | 15,207.00 | 4,535.00 | ..... | ..... |
| 1909 | 19,367.00 | 8,524.00 | ..... | ..... |
| 1910 | 15,915.00 | 9,960.00 | ..... | ..... |
| 1911 | 12,674.00 | 10,051.00 | ..... | ..... |
| 1912 | 14,537.00 | 8,308.00 | ..... | ..... |
| 1913 | 16,146.00 | 9,369.00 | ..... | \$1,083.00 |
| 1914 | 23,143.00 | 1,497.00 | \$29,994.31 | ..... |
| 1915 | 35,479.84 | ..... | 29,999.99 | ..... |
| 1916 | 38,598.72 | ..... | 30,000.00 | ..... |
| 1917 | 64,811.65 | ..... | 30,000.00 | ..... |
| 1918 | 74,102.77 | ..... | 29,997.50 | ..... |
| 1919 | 63,947.29 | ..... | 30,000.00 | ..... |
| 1920 | 35,650.36 | ..... | 20,000.00 | ..... |
| 1921 | 36,802.79 | ..... | 19,978.68 | ..... |
| To Oct. 31, '22 | 44,798.97 | ..... | 14,015.94 | ..... |
| Totals | \$516,306.39 | \$54,104.00 | \$233,986.42 | \$1,083.00 |

LIVE STOCK SANITARY CONTROL WORK.**U. S. Bureau of Animal Industry Expenditures.**

| Jan. 1, 1922, to Oct. | Salaries: | Incidentals: | Totals: |
|---------------------------|-------------|--------------|-------------|
| 31, 1922, inclusive | \$10,827.47 | \$4,411.11 | \$15,238.58 |

Salaries: Expenditures under this heading include salaries of six veterinary inspectors and one clerk.

Incidentals: Expenditures under this heading include traveling expenses of veterinary inspectors, office rent, telephone charges, etc.

State Expenditures.

| Jan. 1, 1922, to Oct. | Salaries: | Incidentals: | Totals: |
|---------------------------|-------------|--------------|-------------|
| 31, 1922, inclusive | \$28,398.05 | \$9,302.10 | \$37,700.15 |

Salaries: Expenditures under this heading include salaries of veterinarians and assistant to veterinarians.

Incidentals: Expenditures under this heading include traveling expenses of veterinarians, office rent, telephone and telegraph charges, office supplies, laboratory equipment, other equipment, supplies, etc.

The following statement shows expenditures from the year 1918 to October 31, 1922, inclusive:

| Year. | U.S. Dept. of Agri. | State Appropriation. | Total. |
|------------------------|------------------------|-------------------------|--------------|
| 1918 | \$ 3,243.81* | \$ 4,395.11 | \$ 7,638.92 |
| 1919 | 7,418.80* | 9,954.56 | 17,373.36 |
| 1920 | 13,325.56 | 30,000.00 | 43,325.56 |
| 1921 | 15,596.24 | 48,985.51 | 64,581.75 |
| To Oct. '22, inclusive | 15,238.58 | 37,700.15 | 52,938.73 |
| Totals | \$54,822.99 | 131,035.33 | \$185,858.32 |

* These amounts do not include the U. S. Dept. of Agriculture's expenditures in hog cholera work in South Carolina for the year 1918, or the first nine months in 1919, as this office has no record of the expenditures made by the U. S. Dept. of Agriculture for hog cholera control work in South Carolina prior to October 1, 1919.

FORCE IN LIVE STOCK SANITARY WORK.

(Paid jointly by State of South Carolina and U. S. Dept. of Agri.)

Veterinary Inspectors—

W. K. Lewis, Inspector in Charge and State Vet., Columbia, S. C.
 L. S. Baer, Columbia, S. C.
 Z. C. Boyd, Columbia, S. C.
 P. J. Gallagher, Columbia, S. C.
 Clarke Hedley, Conway, S. C.
 E. E. Lent, Columbia, S. C.
 *M. G. Smith, Orangeburg, S. C.
 J. R. Urich, Columbia, S. C.
 A. J. Wahn, St. Matthews, S. C.

Assistant State Veterinarians—

M. L. Boyd, Walterboro, S. C.
 H. S. Brundage, Georgetown, S. C.
 E. T. Fisher, Columbia, S. C.
 H. B. Hood, Kingstree, S. C.
 W. D. McCormack, Conway, S. C.
 R. A. Mays, Clemson College, S. C.
 F. K. Peterson, Columbia, S. C.
 J. H. Rietz, Columbia, S. C.
 S. D. Shoulkin, Allendale, S. C.
 S. M. Witherspoon, Jr., Marion, S. C.
 R. K. Donly, Clerk, Columbia, S. C.
 George Smith, Clerk, Columbia, S. C.
 Margaret Robertson, Clerk, (Stenog.-Typewriter) Columbia, S. C.

Assistants to Veterinarians—

J. O. Ackerman, Cottageville, S. C.
 A. M. Addison, Cottageville, S. C.
 J. E. Bailey, Jamestown, S. C.

D. E. Benton, Walterboro, S. C.
E. W. Beverly, Marion, S. C.
William Bivens, Ravenel, S. C.
G. S. Clark, Whitehall, S. C.
B. A. DuBois, Frogmore, S. C.
D. H. Heyward, Bluffton, S. C.
R. H. Hudson, Ridgeway, S. C.
J. J. Jackson, Awensdaw, S. C.
E. J. Jenkins, Edisto Island, S. C.
L. C. Lachicotte, Jr., Brook Green, S. C.
C. O. McCormack, Ridgeland, S. C.
C. P. McTeer, Yemassee, S. C.
A. G. Mitchum, Bethera, S. C.
J. P. Raymond, Hardeeville, S. C.
J. M. Rowell, Bluffton, S. C.
W. T. Rowell, Nichols, S. C.
J. P. Sauls, Lake City, S. C.

Agents in Tick Eradication—

W. M. Barnwell, Younges Island, S. C.
J. S. Baskin, Summerton, S. C.
J. M. Boyd, Conway, S. C.
M. C. Butler, Loris, S. C.
J. Y. Clark, Eadytown, S. C.
G. S. Cuthbert, Summerville, S. C.
H. L. Easterlin, Seabrook, S. C.
S. P. Elliott, Gallivant's Ferry, S. C.
W. F. Gaillard, Summerton, S. C.
J. E. Gillis, Kingstree, S. C.
W. H. Harrison, Varnville, S. C.
G. W. Hill, Ridgeville, S. C.
J. C. Hoats, Walterboro, S. C.
W. H. Jones, Kershaw, S. C.
J. C. Kinsey, Awensdaw, S. C.
J. D. Limehouse, Summerville, S. C.
V. E. McCormack, Ridgeland, S. C.
Theodore Malphrus, Ridgeland, S. C.
M. B. Marvin, Beaufort, S. C.
A. A. Patterson, Jr. Walterboro, S. C.
C. C. Strobel, Ridgeville, S. C.
B. H. Vereen, Burgess, S. C.
B. L. Walpole, Younges Island, S. C.
S. H. Williams, Georgetown, S. C.
F. H. Worthington, Frogmore, S. C.
E. E. Wyndham, Bonneau, S. C.

Cattle Inspectors—

L. M. Alsbrooks, Wilson, S. C.
H. F. Beach, Walterboro, S. C.

E. A. Boynton, Green Pond, S. C.
Daniel Buckley, Moultrieville, S. C.
C. L. Crawley, Hilton Head, S. C.
E. E. Easterlin, Ashton, S. C.
E. W. Goodwin, Ritter, S. C.
H. C. Gore, Longs, S. C.
W. D. Gregorie, Yonges Island, S. C.
O. S. Heape, Jr., Summerville, S. C.
R. B. Hills, Edisto Island, S. C.
D. G. Hinson, Conway, S. C.
E. J. Hotchkiss, Daufuskie Island, S. C.
F. M. Johnson, Ashaw, S. C.
E. K. Moore, Mt. Pleasant, S. C.
J. H. Pepper, Mt. Pleasant, S. C.
J. E. Riley, Okatie, S. C.
W. B. Skilling, Bellinger, S. C.
G. F. Sullivan, McClellanville, S. C.
W. C. Walker, Pritchardville, S. C.
J. E. Wilson, Columbia, S. C.
**J. M. Leaphart, Clerk, Columbia, S. C.

* M. G. Smith, veterinary inspector, is also paid part salary by Orangeburg County.

** J. M. Leaphart and J. E. Wilson, clerks, are paid out of Hog Cholera Control Reinvestment Fund.

Respectfully Submitted,

W. K. LEWIS,

Inspector in Charge and State Veterinarian.

Report on Clemson College of the Investigating Staff of Experts to the Legislature Committee on Economy and Consolidation

Scope of Activities:

Clemson Agricultural College is not merely a state supported institution of higher learning, as is believed by many well informed intelligent people of the state, but carries on very diverse activities, some only remotely related to educational work as the term is usually interpreted. The principal activities of the institution may be roughly classified as follows:

1. Work of College Proper. This consists of instruction in engineering, agricultural, and textile work and in other subjects usually taught in a technical school.

2. Research Work: This consists of experimental and other research work, especially in agriculture, for the purpose of discovering facts and principles hitherto unknown and of disseminating them in such fashion as to make feasible their widest possible use in actual practice. For the purpose of this work the grounds at Clemson College are used and experiment stations have been established in the Pee Dee section at Florence and in the coast section at Summerville.

3. Extension Work: This work consists of carrying to the farmers of the state through county agents, through bulletins and press articles, and through other means the greatest possible amount of information relating to the best practice with regard to crop rotation, soil fertility, means of combating insect pests, and other agricultural matters.

4. Live Stock Sanitary Work: This consists of certain work in the field undertaken for the purpose of controlling and preventing epidemic and other diseases among live stock.

5. Fertilizer Inspection: This work consists of the collection and analysis of fertilizers offered for sale in the state and the dealing with violation of laws relating to the manufacture and sale of fertilizers through prosecution of offenders or other means. Only in the broadest and vaguest sense can this be considered as educational work: in essence it is law enforcement work, though of an agricultural nature.

6. Other Activities: The college also undertakes voluntarily or in accordance with law several other activities such as the manufacture

and distribution of serum for the control of hog cholera, the slaughter of diseased stock, tick eradication work, and the control of insect pests.

For the purpose of carrying on the above activities the administrative officers have found it advisable not to attempt to do all the work from Clemson College. As is mentioned above, experiment stations have been established at Florence and Summerville. In connection with live stock sanitary work and certain inspection work, district offices with scientific and clerical staffs of their own have been established at Florence, Aiken, and Spartanburg.

The location of the school at Clemson College also enforces upon the institution the undertaking of a work of unusual activities. Owing to the fact that the school is located in the open country the college has been compelled to provide dormitories, a mess hall for students, housing and hotel facilities for the faculty and other employees, a water and sewerage system of its own, a heating and lighting plant, and even a highway system with a maintenance force. In effect the President is not only the head of an educational institution of considerable size, but is also the mayor of a small but very active municipality and the director of extension research, and law enforcement activities that cover the whole state with considerable thoroughness.

Management and Internal Organization:

The Board of Trustees at Clemson Agricultural College is made up of thirteen members, six of whom are elected by the Legislature and seven of whom are appointed in accordance with the will of Thomas G. Clemson, which named seven of the original trustees and provided that as vacancies occur the remaining non-elected members should name their successors. The Board of Trustees determines policies and either as a whole or through its committees passes upon certain executive matters; the administration of the diverse activities of the college, however, is in the hands of the President who, as a matter of fact, takes an active, if unofficial part also in the determination of policies.

Whether the management of such an institution as Clemson Agricultural College, supported for the most part by public funds, should be placed in the hands of a Board of Trustees the majority of whom are not selected through any state agency is a matter of policy to be determined by the Legislature and the electors. Without question the constitution of the Board is the cause of more or less unfavorable criticism. Equally without question the amount of unfavorable criticism has been held to a minimum through the selection of a high type of men by successive trustees under the terms of the bequest and by the policies followed by the Board as a whole; it appears that as a rule the seven trustees have previously been endorsed by the people through their selection for public office and command the confidence and respect of the people of the state, while additional protection is given by the law providing that no money can be expended unless it is authorized by a vote of at least nine of the members of the Board. A weak or arbitrary board would probably lead to an immediate and overwhelming

ing demand for a change in the form of management. There seems to be no doubt that the state can at any time make it impossible for the College to continue on the present scale by withholding its support; the income derived from the original bequest and the rental value of the lands is inconsequential in comparison with the total receipts, while the direct state appropriations and the amounts received from the federal government on condition that they be expended under the direction of the state make up by all odds the largest part of the income. It may be pointed out also that it is not clear in view of the provisions of Thomas G. Clemson's will whether the state could be given a clear title to the grounds and buildings under a different form of management; some lawyers hold, however, that legal means of effecting a change exist.

The President has built up the type of internal organization for administrative purposes which is generally considered most effective in securing results, most economical as to cost, and most simple in operation. As is implied above the President is responsible to the Board of Trustees for all administrative matters. Seven Directors, in addition to the Treasurer and Secretary of the Fertilizer Inspection Analysis, are at the head of sub-divisions and constitute the President's unofficial advisory cabinet; each Director is responsible for the operation and expenditures of his department and the teachers and other employees deal with him directly instead of with the President.

Receipts and Expenditures:

The financial statement of such an institution as Clemson Agricultural College, engaged in diverse activities, is of necessity somewhat complex and very voluminous if details are to be shown. The following summaries taken from the budget of the fiscal year 1921-22 contain the most important facts:

Fiscal Year 1921-22

SUMMARY—CLEMSON COLLEGE FINANCES.

PROSPECTIVE RESOURCES

(a) Available for Collegiate Purposes and Certain Required Public Services.

| | | |
|--|-------------|--------------|
| 1. Interest on Clemson Bequest | \$ 3,512.36 | |
| 2. ...Interest on Landscript | 5,754.00 | |
| 3. Estimated tuition | 13,000.00 | |
| 4. ...Morrill and Nelson Funds (U. S.) | 25,000.00 | |
| 5. Sales, rents, interest, etc | 30,000.00 | |
| 6. Estimated Fert. tax and penalties | 200,000.00 | |
| 7. ...Remaining in reserve fund | 77,209.33— | \$354,475.71 |

(b) Available for Special Public Service Only—

| | State Appro. | U. S. D. A. Counties, etc. |
|------------------------------------|-----------------|-------------------------------|
| 7. Extension Service | \$ 94,147.15 | \$276,922.42 |
| 8. Tick Eradication | 20,000.00 | |
| 9. Live Stock Sanitary Work | 50,000.00 | 32,380.00 |
| 10. Agricultural Research | 50,000.00 | 33,070.00 |
| 11. Crop Pest Commission | 10,000.00 | 10,000.00 |
| 12. Slaughter Diseased Stock | 2,000.00 | |
| 13. Hog Cholera Control | | 50,000.00*** |
| | <hr/> | <hr/> |
| | \$126,147.15 | \$402,372.42 \$628,519.57 |

(c) Available for Certain College Activities—

| | |
|---|----------------|
| 14. Revolving Accounts (receipts) | \$215,893.22** |
|---|----------------|

(d) Available for Cadet Living Expenses—

| | |
|--------------------------------|-----------------|
| 15. Cadet Fund Receipts | \$246,443.00*** |
| GRAND TOTAL OF RESOURCES | \$1,445,331.50 |

* Only \$242,049.72 of this amount passes through the College Treasurer. Of this \$121,532.39 is administered by Winthrop College for Home Demonstration.

**Dairy herd, farm, animal husbandry, etc.

*** Last year's figures.

COMPARATIVE STATEMENT

Fiscal Years 1920-21—1921-22.

COLLEGE RECEIPTS—

| | Estimated for 1920-21 | Actually Received | Estimated for 1921-22 |
|---------------------------------------|--------------------------|----------------------|--------------------------|
| 1. Interest on Clemson Bequest\$ | 3,512.36 | \$ 3,512.36 | \$ 3,512.36 |
| 2. Interest on Land Script | 5,754.00 | 5,754.00 | 5,754.00 |
| 3. Morrill and Nelson Funds (U.S.) | 25,000.00 | 25,000.00 | 25,000.00 |
| 4. Tuition and Fees | 17,000.00 | 13,496.40 | 13,000.00 |
| 5. Sales, rents, interests, etc. | 22,000.00 | 46,232.54 | 30,000.00 |
| | <hr/> | <hr/> | <hr/> |
| | 73,266.36 | 93,985.30 | 77,266.36 |
| 6. Fertilizer Tax and Penalties | 300,000.00 | 167,505.16 | 200,000.00 |
| | <hr/> | <hr/> | <hr/> |
| | 373,266.36 | 261,490.46 | 277,266.36 |
| 7. From Reserve Fund | | 77,203.68 | 77,209.35 |
| | <hr/> | <hr/> | <hr/> |
| 8. TOTALS | \$373,266.36 | \$338,694.14 | \$354,475.71 |
| | <hr/> | <hr/> | <hr/> |

EXPENDITURES—

| | Estimated for 1920-21 | Actually Received | Estimated for 1921-22 |
|---|--------------------------|----------------------|--------------------------|
| 9. Salaries | \$169,150.00 | \$157,077.69 | \$161,443.34 |
| 10. Coal, labor, etc. | 112,984.32 | 96,832.65 | 98,125.50 |
| 11. Total operating expenses | \$282,134.32 | \$253,910.34 | \$259,568.84 |
| 12. Equipment for teaching | 15,735.16 | 7,955.70 | 15,380.00 |
| 13. Building and equipment | 30,134.24 | 26,175.58 | 13,403.25 |
| 14. Totals for College Work | \$328,003.72 | \$288,041.62 | \$288,352.09 |
| (b) Public Service (From College Funds)— | | | |
| 15. Scholarships and Advts. | \$ 17,000.00 | \$ 12,749.10 | \$ 20,000.00 |
| 16. Fert. Inspection and Anal..... | 51,570.00 | 29,952.51 | 40,270.00 |
| 17. S. C. Experiment Station | 6,000.00 | 5,467.55 | |
| 18. Miscellaneous | 2,806.00 | 2,483.36 | 1,400.00 |
| 19. Totals Public Service | \$ 77,376.00 | \$ 50,652.52 | \$61,670.00 |
| 20. GRAND TOTALS | \$405,379.72 | \$338,694.14 | \$350,022.09 |

An analysis of these statements show that while total receipts and expenditures accounting to approximately one and a half million dollars in the course of a year may reasonably be expected, the amount available for collegiate instruction and for building and maintenance purposes is really very modest. About a quarter of a million dollars is received from cadets for living expenses and is paid out for the same purpose, the dormitories and mess hall being run at cost. Over \$200,000 in the revolving accounts is received from the dairy, from farms, and from similar operations and is paid out for carrying on these activities. Over \$600,000 must be used for certain specified public services having little to do with the activities of the college proper. Only \$350,000 approximately, remains for collegiate purposes, most of which comes from the fertilizer tax and is uncertain; in addition the \$77,000 in the reserve fund is not income but is a reserve built up through careful economies over a period of years and is used merely to tide the college over the last half of the calendar year when no considerable receipts from the fertilizer tax may be expected. From this amount the salaries of the teaching and maintenance force must be paid, coal and other supplies purchased, and buildings and equipment provided. While casual study of these statements is likely to lead to the conclusion that a large amount of money is available for strictly college purposes, as a matter of fact the amount is little more than is appropriated for the University of South Carolina and the Citadel, both of which have smaller attendance and which do not require as much or as expensive equip-

ment, and considerably less than is appropriated for Winthrop College, which has a larger attendance but which also is not required to provide such extensive and expensive equipment. In fact, because of the comparatively small amount of money available for college work proper and because of the uncertainty as to the amount that can be collected from the fertilizer tax, there is a perennial danger that this work will be seriously hampered for lack of available funds.

Efficiency of Operation:

From whatever angle the work of Clemson Agricultural College is viewed evidence of efficiency, economy and effective results are apparent. The standing of Clemson College in educational circles and the success achieved over a considerable period by the graduates make unnecessary any extended comments on the strictly educational work. As to economy, the internal organization and procedure are well adapted to securing maximum results at a minimum cost. The Professor of Architecture, for example, is responsible for the maintenance of the building and grounds and the Director of the Engineering Department for the operation of other college owned utilities such as the water, light power, and sewerage systems, as a result, the buildings on the whole are in a good state of repair and the costs of maintenance have been very moderate. The rent of some sixty houses occupied by members of the teaching staff and others is in some cases about 10 per cent of their cost, the occupants paying for their water, gas and other services; this rental provides for maintenance, depreciation and interest in the investment. The commissary system and records might well serve as a model for several state institutions and the same is true of the farm records. The system of purchasing is well worked out and adapted in every particular to the needs of the institution. Cost data are collected, scrutinized, analyzed, and used both for current administrative purposes and for determining policies. At every turn there is evidence of the smooth frictionless working of a carefully devised and operated machine calculated to bring about good results with minimum effort and cost. The recommendations made in this report deal almost entirely with matters of policy or with small matters of organization or procedure almost inconsequential in view of the operation of the College as a whole. The expense of operation—about \$300 per student for collegiate purposes in 1920-21—is moderate in view of the buildings, laboratories, shops and personnel required to give instruction of a high standard in agriculture, engineering textiles, and other technical subjects.

Desirability of Direct State Appropriation:

As is stated in preceeding sections, the college received the receipts from the fertilizer tax, which vary from year to year largely according to industrial conditions; the gross collections exceeded \$300,000 in 1919-20 and fell below \$151,000 in 1914-15 (the average for 31 years has been \$155,000). Until recently this tax provided the College with a liberal income out of which it could pay running expenses and make

considerable outlays for buildings and other permanent equipment. With the growth of the college and the increase of operating costs, however, this method of financing the college work proper has become less and less satisfactory, and in the interest of continuity of policy and program and economical management should be discarded as soon as possible in favor of direct appropriations. It is particularly unfortunate that the college proper should depend upon such an uncertain income while specified appropriations are made for public work such as live stock sanitation. The administrative officers are able to determine with great accuracy the money needed to carry on the collegiate work and have given ample evidence through the accumulation of the reserve fund, through the construction of a large number of buildings, and through economical management that they are unlikely to ask for excessive amounts or to expend appropriations improperly if the Legislature makes this change. On the other hand, there is every evidence that the management is hampered and must follow a cautious policy as long as reliance is placed upon the fertilizer tax, while certain desirable kinds of work such as forestry, cannot be undertaken at all. It would be better from every point of view to turn the fertilizer tax into the state treasury and to make direct appropriations sufficient to meet the needs of the collegiate work.

Building Program:

The building program in recent years has been as uncertain as the fertilizer tax upon which it has depended. The present buildings are not adequate to house properly the present student body and teaching force despite the fact that the attendance has not reached the point generally considered as most desirable to reduce the per capita cost to a reasonable amount without at the same time increasing the number of students to such an extent that the best educational and social results are not attained; in view of the present attendance of approximately 1000 of the likelihood of considerable increase in the next few years if facilities are provided, and of the desirability of an increase of at least 25 percent in order to reduce per capita costs, it would appear desirable to lay out and follow a definite building program. It is believed that if the Legislature should adopt the plan of providing say \$100,000 a year for a period of ten years or about \$150,000 a year for about six or seven years the physical equipment could be built up to keep pace with the growth in attendance and that at the end of the period the college would be well equipped as to building for a considerably larger number of students without the necessity of a bond issue and a consequent practical doubling of building costs owing to interest payments. As yet there is opportunity to embark on this policy of relatively slow building up; a delay of two or three years would surely mean a bond issue to provide immediately the extra equipment necessary to take care of the increased number of students to be expected in that time. Even at present the extension service is poorly housed and seriously crowded and additional buildings are needed for some other departments.

Scholarships.

In the school year 1920-21, \$12,749.10 was expended for scholarships and the advertising connected therewith and it is estimated that \$20,000 will be needed for this purpose in the school year 1921-22. A separate report will take up the matter of scholarships in the state supported colleges.

Graduate Work:

Up to this time no attempt has been made to undertake graduate work at Clemson Agricultural College, partially because the finances and facilities of the institution have been taxed to provide for undergraduate work and partially because of the feeling on the part of the Board of Trustees and the President that such work is as yet not necessary. It appears that the time is near at hand, however, when it will be desirable to offer graduate work in both agriculture and engineering. The University of South Carolina, with much poorer equipment and with much less adequate teaching staff at present offers graduate work in civil engineering, it will be pointed out in the interim report on the University that the University is the best place to build up a graduate school in the arts and pure sciences but that graduate work in applied science cannot be undertaken there without great duplication and prohibitive costs. Because of the teaching personnel and the equipment already at Clemson Agricultural College any graduate work of this kind should be undertaken there; and it is believed that the best interests of the state will be served if graduate courses are introduced within the next two or three years.

Salary Scale:

The plan or organization adopted make possible the building up of a strong teaching force at a very moderate expense. The salaries of the Directors in the main are \$3500 though three are paid \$4000, \$4250, and \$4500, respectively, while one (the Commandant) receives \$1500 and a house in addition to his army pay. In general the highest paid professor under the director receives \$2800, though in the Agricultural Department four receive from \$3000 to \$3250; the salaries of the other members of the teaching staff range down to as little as \$1400. No such perquisites as free rent, light, heat or fuel are furnished except in the case of the Commandant. The following list showing the positions and salaries in the engineering department is believed to be typical

| | |
|---|-----------|
| Director and Supt. of Heat, Light and Water..... | \$4000.00 |
| Professor of Civil Engineering | 2800.00 |
| Professor of Electrical Engineering | 2800.00 |
| Professor of Drawing and Architecture | 2800.00 |
| Professor of Electrical Engineering | 2800.00 |
| Assistant Professor of Machine Shop | 2250.00 |
| Associate Professor of Foundry and Forge | 2250.00 |
| Associate Professor of Drawing | 2250.00 |
| Associate Professor of Mechanical Engineering | 2500.00 |

| | |
|--|------------|
| Assistant Professor of Civil Engineering | 2000.00 |
| Assistant Professor of Architecture | 2000.00 |
| Assistant Professor of Wood Shop | 2000.00 |
| Instructor in Drawing | 1800.00 |
| Instructor in Shop Work | 1600.00 |
| Stenographer | 1020.00 |
| <hr/> | |
| Total | \$34020.00 |

In determining the starting salary and making advances no uniform plan is followed. In general the educational and professional attainments and the results secured in the class room are the prime considerations.

Form of Appropriations:

The form and content of the budget estimates and the section of the appropriation bill relating to Clemson Agricultural College are drawn up in an extremely unsatisfactory fashion as neither the total income and the sources from which it is derived nor the total expenditures with their purpose and character are shown. This is not the fault of the college authorities, for as a matter of fact Clemson Agricultural College has a very carefully worked out budget, perhaps more complete and accurate than any other large institution to which the state makes appropriations, and is able and willing to furnish any information in any form desired. It is eminently desirable that both the estimates prepared by the budget authorities and the appropriation bill should be drawn up in such form that members of the Legislature and interested tax payers may have a clearer picture of the income, of the expenditures, and of the purpose for which the money is spent. This would not entail any extra work worthy of mentioning on either the part of the college authorities or the budget officers, but would result in a distinct gain to the Legislature and in the end to the college itself by giving members of the Legislature an intelligent conception of the finances and needs of the institution.

Fertilizer Inspection Work:

The collection and analysis of samples of fertilizers require an annual expenditure of about \$40,000, the largest item being \$12,500 for the pay and travel expenses of thirteen inspectors, \$8,500 for tags and printing, and \$8,550 for the salaries of Chemists who engage in the analysis of samples. The work being in the nature of law enforcement and only indirectly related to education serves to put the College before many citizens in an unfavorable light. It is particularly unfortunate that the College should be placed in the position of bringing prosecutions, though the necessity for such action has been reduced to the minimum by the practice of making conspicuous in the annual statements the names of the manufacturers of samples found deficient as well as of the respect in which the samples are deficient. At the time the College was visited nothing was being done in the way of fertilizer inspection or analysis, as this work is confined almost entirely to the

first half of the year; it is believed, however, that the work is more efficiently and economically handled than could reasonably be expected from any other state agency and that it should continue to be done by Clemson Agricultural College unless the unfavorable criticism which results is regarded as sufficient reason for transferring this work elsewhere. One difficulty of making the transfer is the necessity, in some cases at least, of making field tests with growing crops as well as chemical analysis.

Publicity Work:

In connection with the extension and research work a number of different kinds of publicity matter are prepared and distributed, including a weekly news letter "The Weekly News Notes," bulletins and posters. This material appears to be prepared satisfactorily from the standpoint of scientific accuracy, news value, and suitability for the audience addressed. Some embarrassment results from the necessity of pointing out the lack of scientific accuracy in some of the material sent out by the Commissioner of Agriculture's office through the Market Bulletin. The publicity matter of the college is well prepared and covers the field so thoroughly that it is not believed the necessity exists for the issuing of any such material by any other state agency.

Comments on Procedure and Conditions:

As is indicated in the preceding section, with rare exceptions the procedure is all that could be asked and existing conditions are very satisfactory. The following comments refer to some matters in which improvement might be possible:

Commissary Records: The Commissary records are on the whole very well kept but it would seem that the perpetual inventory system might be introduced with benefit in the record of supplies received and issued.

Chemical Supplies: It is understood that under the system prevailing last year no one individual was in charge of the store room for the equipment and the supplies kept in the chemistry building and as a result some of the apparatus in usable condition becomes scattered about the various laboratories and the stock of chemicals and chemical apparatus somewhat confused with certain parts broken and damaged. It is understood, however, that this condition has been remedied with the opening of the new school year by placing one individual in charge.

Fire Hazards: The recent fire in the kitchen and commissary, which was quickly extinguished, demonstrated the effectiveness of the school fire fighting force and equipment. The water pressure and the storage facilities seem ample, but it might be desirable to extend to the agricultural and dairy buildings, where gases and chemicals are used, the sprinkler system which has already been installed in the engineering building and shops and chemistry buildings, and the hotel. Possibly it might be advisable to install some additional hand fire extinguishers in some of the other buildings.

Summary of Recommendations:

It is recommended:

1. That direct appropriations from the state treasury be substituted for the income derived from the fertilizer tax.
2. The estimates and appropriations show the amount and sources of the income and the purpose and character of expenditures in considerable detail and that the estimates be supplemented by such supporting schedules as may be necessary to show a complete picture of the financial operations and needs of the college.
3. That a building program effective in 1922 and providing for annual appropriations of \$100,000 for a period of ten years or \$150,000 for six or seven years be adopted.
4. That consideration be given to the undertaking of graduate work in engineering and agriculture.
5. That the publicity work with regard to agriculture be continued along the present lines and that any such publicity work undertaken by other state agencies be either discontinued or transferred to Clemson Agricultural College.
6. That certain minor matters of procedure of maintenance be given attention.

INVESTIGATING STAFF

By Fred Telford,

Chief Investigator

Columbia, S. C., Oct. 7, 1921.

Historical Sketch of Clemson College

Thomas G. Clemson, after whom the College is named, was born in Philadelphia in July, 1807, and died at the Fort Hill home April 6, 1888.

In 1823, then scarcely 16 years old, he ran away from home, and, after spending some time in England, went to Paris, where he took up arms in the revolution of that time. His gallantry brought him recognition and the friendship of prominent men, resulting in his being given a course in the celebrated School of Mines in Paris. In this school he remained four years, graduating with high honors.

While he was in Europe, his father died, leaving nothing to him in his will. Soon after this he returned to America, and establishing himself in Washington, practiced his profession of Mining Engineer, and accumulated a comfortable fortune. It was here that he met Miss Anna Marie, the eldest daughter of John C. Calhoun, and married her. Two children resulted from this union—a daughter, Floride, who afterwards became Mrs. Gideon Lee, of New York, and a son, John Calhoun Clemson.

Mr. Clemson was a strong advocate of the political doctrine of Mr. Calhoun, and when the war broke out, fearing arrest, he and his son escaped by night in a boat, and walking to Richmond, offered their services to President Davis. Mr. Clemson was assigned to the Trans-Mississippi Nitre Mining Department, where he served until the end of the war. His son was appointed a Lieutenant and assigned to active duty.

At the end of the war, Mr. Clemson with his family came to Pendleton and resided with Mrs. John C. Calhoun until her death in 1866.

Mr. Clemson was interested as far back as this date in the establishment of an Agricultural and Industrial College. In November 1866, a Committee was appointed, consisting of Hon. Thomas G. Clemson, Hon. R. F. Simpson and Col. W. A. Hayne, to appeal to their fellow men for

“Aid to found an institution for educating our people in the Sciences, to the end that our Agriculture may be improved, our worn and impoverished soils be recuperated, the great natural resources of the South be developed.”

In January 1867, at a meeting of the Pendleton Farmers' Society, Mr. Clemson addressed the body in “an able and most interesting and instructional discourse,” and submitted in the form of a circular the appeal above referred to. The circular was written by Mr. W. H. Trescot, and closes with the words:

"Letters and contributions to be directed to the Hon. Thos. G. Clemson, LL.D., Chairman of the Committee, Pendleton, Anderson District, South Carolina.

Again in the minutes of the same Society, of which he was elected President in 1868, under date of Oct. 14, 1869, we find the following:

"The President, (Mr. Clemson), entertained the Society for half an hour on the subject of Scientific Agriculture, and the Importance of Scientific Agricultural Education."

These citations indicate an early interest on the part of Mr. Clemson in the great cause to which he later devoted his estate.

Previous to the war Mrs. John C. Calhoun had sold the Fort Hill place and negroes to her son, Col. Andrew P. Calhoun, taking in payment his bond and mortgage for \$40,200.00. At her death, she left a will, bequeathing to her daughter, Mrs. Clemson, three-fourths of the value of this bond and mortgage, and to her granddaughter, who at the time of Mrs. Calhoun's death was Mrs. Gideon Lee of New York, the remaining one-fourth of the bond and mortgage.

Shortly after Mrs. Calhoun's death, Mrs. Thomas G. Clemson, after considerable costly litigation foreclosed the mortgage on the Fort Hill place, and at the sale of the property in Walhalla in January 1872, Mr. Clemson, as Trustee for his wife and daughter, bid it in for \$15,000,* and he himself paid out of his private funds about \$8,000 to cover lawyer's fees, court cost, etc.

In 1871, Mr. Clemson's daughter, then Mrs. Gideon Lee, died, and seventeen days later, his only son, John Calhoun Clemson, was killed in a railroad accident at Seneca. Left childless, Mrs. Clemson willed to her husband, Thomas G. Clemson all of her estate, "absolutely and in fee simple."†

Mr. Clemson, in his will, left to his granddaughter, Floride Isabella Lee, \$15,000 to free the property, which by the same will was donated to the State, from any claim in equity that the granddaughter might have. This was, of course, in addition to one-fourth of the estate which descended to Miss Lee from her mother.

Neither by intention, nor by donation, nor by any form of hereditary transmission does it anywhere appear that John C. Calhoun had anything to do with the founding of the College which bears Clemson's name.

In 1875 Mrs. Clemson died, and on April 6, 1888, Mr. Clemson followed her to the grave, and was buried in the Episcopal church yard at Pendleton.

Mr. Clemson's will was bitterly contested by the Lee family, but was finally fully sustained by the U. S. Supreme Court. After the settlement of the will, the Trustees of the College bought from Miss Floride Isabella Lee her one-fourth of the estate which adjoined the tract given to the State by Mr. Clemson.

* See Title Book, Oconee County, P. 177-f.

† See Judge of Probate's Office, Oconee County, Apartment 26, Package 287.

The following extracts are made from Mr. Clemson's will[‡] in order to show clearly his purpose in offering his property to the State for the founding of the Clemson Agricultural College.

* * * * "Feeling a great sympathy for the farmers of this State, and the difficulties with which they have to contend in their efforts to establish the business of agriculture upon a proper basis, and believing that there can be no permanent improvement in agriculture without a knowledge of those sciences which pertain particularly thereto, I have determined to devote the bulk of my property to the establishment of an Agricultural College upon the Fort Hill Place. My purpose is to establish an Agricultural College which will afford useful information to the farmers and mechanics; therefore it should afford thorough instruction in agriculture and the natural sciences connected therewith; it should combine, if practicable, physical with intellectual education, and should be a high seminary of learning in which the graduate of the common schools can commence, pursue and finish a course of studies terminating in thorough theoretic and practical instruction in those sciences and arts which bear directly upon agriculture. But I desire to state plainly, that I wish the Trustees of said institution to have full authority and power to regulate all matters pertaining to said institution, * * * * but to always bear in mind that the benefits herein sought to be bestowed are intended to benefit agriculture and mechanical industries. * * * I trust I do not exaggerate the importance of such an institution for developing the material resources of the State, by affording its youth the advantages of scientific culture, and that I do not over-rate the intelligence of the Legislature of South Carolina, ever distinguished for liberality, in assuming that such appropriations will be made as will be necessary to supplement the fund resulting from the bequest herein made."

"I therefore give * * * * the aforesaid Fort Hill place where I now reside, formerly the house of my father-in-law, John C. Calhoun, consisting of eight hundred and fourteen acres, more or less, in trust that whenever the State of South Carolina may accept said property as a donation from me, for the purpose of thereupon founding an Agricultural College, in accordance with the views I have hereinbefore expressed, (of which the chief justice of South Carolina shall be the Judge,) then my executor shall execute a deed of the said property to said State and turn over to the same all property hereinafter given as an endowment of said institution, to be held as such by the said State so long as it in good faith devotes said property to the purpose of the donation." * * * *

"The following named gentlemen, seven in number, shall be seven of the Board of Trustees, to-wit: R. W. Simpson, D. K. Norris, M. L. Donaldson, R. E. Bowen, B. R. Tillman, J. E. Wannamaker, and J. E. Bradley; and the State, if it accepts the donation, shall never increase the Board of Trustees to a number greater than thirteen in all, nor shall the duties of the said Board be taken away or conferred upon any other men or body of men. The seven Trustees appointed by me, shall always have the right, and the power is hereby given them and their successors, which right the Legislature shall never take away or abridge, to fill all vacancies which may occur in their number by death, resignation, refusal to

[‡] See Judge of Probate's Office, Oconee County, Apartment 64, Package 671.

act, or otherwise. But the Legislature may provide as it sees proper for the appointment or election of the other six Trustees, if it accepts the donation. * * * The name of this Institution is to be "The Clemson Agricultural College of South Carolina."

In the codicil to his will, Item 12, occurs the following significant statement:

"The desire to establish such a school or college as I have provided for in my said last will and testament, has existed with me for many years past, and many years ago I determined to devote the bulk of my property to the establishment of an Agricultural School or College. To accomplish this purpose is now the one great desire of my life."

In November 1889, the General Assembly of South Carolina passed the necessary acts authorizing the acceptance of the terms of Mr. Clemson's will, and the establishment of the College. The following extracts are taken from the State laws relating to the College:

Section 1300: "The Honorable Thomas G. Clemson having departed this life on the sixth day of April, A. D. 1888, leaving of force his last will and testament * * * wherein he devised and bequeathed the Fort Hill plantation, as well as all his other property, both real and personal, except certain legacies in the said will mentioned and provided for, all in trust to convey to the State of South Carolina when the said State shall accept the same for the purpose of establishing and maintaining an Agricultural and Mechanical College upon the aforesaid Fort Hill plantation upon the terms and conditions of said will, the State of South Carolina hereby expressly declares that it accepts the devise and bequest of Thomas G. Clemson, subject to the terms and conditions set forth in his last will and testament." * * * *

"Section 1302: The said College shall be under the management and control of a Board of Thirteen Trustees composed of the seven members nominated by said will and their successors and six members to be elected by the Legislature in Joint Assembly."

Section 1304: That it shall require a two-thirds vote of said Board of Trustees to authorize the expenditure of any moneys appropriated to said College by the State, or to authorize the sale or transfer or re-investment of any property or moneys arising from the sale of any property under the provisions of this Act."

"Section 1319: All the privilege tax on fertilizers heretofore required to be paid to the Commissioner of Agriculture shall in the future be paid to the Treasurer of the State, subject to the order of the Board of Trustees of the Clemson Agricultural College of South Carolina; and so much of the money so received as shall be necessary to defray the expenses of the Board in performing the duties now by this Act devolved upon them shall be thus used, and the balance shall go to the said College, for its erection and maintenance."

It will be seen from the above extracts that the State accepted in good faith the terms of Mr. Clemson's will, features of which were the maintenance of the College, the recognition of the self-perpetuating life membership appointed by Mr. Clemson, and the naming of the College after Mr. Clemson.

In his will Mr. Clemson provides that there should be seven life trustees and that six might be selected by the State. It would seem appropriate to mention that in the appointment of the seven life trustees, Mr. Clemson had two purposes in mind. The State had only recently emerged from negro domination and during a part of that time the doors of the University and of the Citadel had been closed because of the action of a radical legislature admitting negroes as well as whites. Mr. Clemson wished to insure white supremacy in the government of Clemson. Also, at the time he wrote his will, industrial education had no standing with southern educators and the danger of having the college diverted from its purpose into a classical institution loomed large in Mr. Clemson's mind.

At the time of the Act of Acceptance, however, these dangers were overpassed and the Legislature passed the rule that a two-thirds vote of the entire Board of Trustees would be necessary to expend any moneys appropriated to the said college by the State.

This is a historical sketch, not an argument. Whether it were wise to create a separate agricultural and mechanical college located in one corner of the state is now very largely an academic question—likewise it may be a question with some whether the State should have accepted the bequest under the terms of Mr. Clemson's will. In the face of an accomplished fact, logic and lamentation are alike impotent. South Carolinians are more interested in knowing not what might have been done, but what has actually been accomplished. Clemson College itself is the answer to that question.

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THIRTY-FOURTH ANNUAL REPORT
OF THE
BOARD OF TRUSTEES

OF THE
CLEMSON
AGRICULTURAL
COLLEGE

TO THE
General Assembly of South Carolina

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THIRTY-FOURTH ANNUAL REPORT

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CLEMSON AGRICULTURAL COLLEGE

TO THE

General Assembly of South Carolina

1923

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LETTER OF TRANSMITTAL.

To the General Assembly of South Carolina,
Columbia, S. C.

Gentlemen:

In obedience to the laws of the state, the Board of Trustees of The Clemson Agricultural College of South Carolina presents herewith its annual report covering the operation of the college for the fiscal year July 1, 1922 to June 30, 1923.

The report is voluminous because it is our purpose to give to the legislature the fullest possible information regarding the work, plans and finances of the state's agricultural and mechanical college.

The attention of the General Assembly is especially invited to the last chapter of the president's report, page 43, which deals with appropriations necessary for the calendar year 1924. The Board has requested no more for public service work than in 1923, practically the same amount within a few hundred dollars for the operation and maintenance of the college. The new dormitory requested is necessary because of the increased demands upon the college which cannot otherwise be met. By crowding, the attendance of the college has been increased year by year, until this year it was necessary to crowd three students into 110 rooms in our present dormitories. The number of students who cannot be accommodated is also increasing every year.

It is requested that the legislature give careful consideration to the request contained in the President's report that the notes for moneys borrowed from the State Treasury be cancelled.

In conclusion, the Board of Trustees wishes to convey to the legislature its sincere appreciation of the consideration which the college has always received, and to solicit a continuance of this support, which support the college hopes always to deserve. The trustees and the legislature are partners in the great public enterprise, whose purpose is to conserve and to promote the interest of agriculture in all of its phases in South Carolina.

Very respectfully and truly yours,

Alan Johnson,

President Board of Trustees.

Clemson College, S. C.,
December 15, 1923.

REPORT OF THE PRESIDENT OF THE COLLEGE

Covering the Fiscal Year July 1, 1922—June 30, 1923.

Clemson College, S. C.,

December 15, 1923.

From: W. M. Riggs,
President of The Clemson Agricultural College.

To: Hon. Alan Johnstone,
President of the Board of Trustees.

Dear Sir:

I have the honor to submit herewith the President's annual report covering the thirtieth session of The Clemson Agricultural College of South Carolina.

The report covers the fiscal year from July 1, 1922 to June 30, 1923, and is intended for your thirty-fourth annual report to the Legislature.

I have arranged the report in seven main divisions as follows—

CHAPTER I. THE COLLEGE SESSION—1922-23.

- 1. A General Statement.**
- 2. A Fiscal Statement.**
- 3. The Collegiate Work.**
- 4. The Student Life and Interests.**
- 5. The Public Service.**

CHAPTER II. APPROPRIATIONS FOR 1924.

- 1. Appropriations for College Work.**
- 2. Appropriations for Public Service.**

CHAPTER I. THE COLLEGE SESSION 1922-1923.

PART I. GENERAL STATEMENT.

The enrollment during the session of 1,012 tops all previous records. Of this total there were 825 in the regular four-year degree courses. The rest were in special and short courses. In addition, 478 attended the 1922 Summer School, bringing the actual total for the year to 1,490.

The graduating class numbered 134 men, of which number 55 were in agriculture, and the remainder scattered through the various other courses.

The health, discipline and class work of the students during this session were very satisfactory, and over and above these local conditions, and even more to be valued, was the confidence and regard in which the college is held by the people of the state. This favorable attitude was reflected in the action of the legislature on every matter in which the college was concerned.

With all of South Carolina now the campus of the college, with an able and consecrated Board of Trustees, with a competent faculty working harmoniously and efficiently, and with a student body diligent and well behaved, with maintenance insured through legislative assistance when needed, and with the prospect of a bond issue to give to the institution those buildings of which it stands so greatly in need—the future of the college was never brighter or more assured.

Additions and Improvements:

Among the improvements and additions of the year may be mentioned the new laundry, the new postoffice equipment, the new story to the wood shop, the civil engineering testing laboratory, the radio broadcasting station, and the addition of a 200 K. W. steam turbine driven generator, and a 150 H. P. boiler at the power station. During the

latter part of the fiscal year, a one hundred foot extension of the messhall with fifty additional rooms in the three stories above, was begun and will be completed by the opening of the session in September, 1923. The toilet buildings to barracks No. 1 which were condemned as unsafe, are in process of being torn down and rebuilt. This work will be completed during the 1923-24 session.

The Fertilizer Tax:

The fertilizer tax reached a total of \$169,717.53, a little more than half of the 1919-20 figure. Our budget to the legislature was predicated upon \$150,000. The excess over that amount was used in building the extension to the messhall, an addition made necessary by our increased attendance. In connection with the messhall, we were able to provide 57 additional rooms. These were all taken up at the opening of the present session, and in 110 rooms it was necessary to house three men to the room, a condition with boys undesirable from the standpoint both of health and of study.

Inventory:

Our inventory as submitted to the Governor gives the following property values as of date June 30, 1923—

| State Classification: | | Estimated Present Values. |
|---|----|--------------------------------------|
| 1. Office Equipment ----- | \$ | 51,961.07 |
| 2. Household equipment ----- | | 48,749.26 |
| 3. Educational and Recreational Equipment ----- | | 247,325.80 |
| 4. Library Equipment ----- | | 46,946.54 |
| 5. Vehicles ----- | | 12,261.19 |
| 6. Live Stock ----- | | 44,344.75 |
| 7. Medical and Surgical Equipment ----- | | 2,151.61 |
| 8. Military Equipment ----- | | 3,625.50 |
| 9. General Plant ----- | | 168,986.86 |
| 10. Buildings ----- | | 1,140,782.45 |
| 11. Real Estate ----- | | 356,379.00 |
| Total Equipment, etc. ----- | | \$2,123,514.03 |
| 12. Supplies ----- | | 75,456.24 |
| Totals ----- | | \$2,198,970.27 |

Inspections and Visitations:

Under the By-laws of the Board of Trustees there is elected each year a Board of Visitors composed of one prominent citizen from each congressional district. The Board of Visitors of 1923 was made up as follows—

| | |
|-------------------------------|-------------|
| 1st District—Robert Lathan | Charleston |
| 2nd District—J. L. Mims | Edgefield |
| 3rd District—Eugene S. Blease | Newberry |
| 4th District—C. O. Hearon | Spartanburg |
| 5th District—William Godfrey | Cheraw |
| 6th District—Dr. Olin Sawyer | Georgetown |
| 7th District—Christie Benet | Columbia |

This Board visited the college on May 2nd and 3rd, all members being present except Mr. Benet, of Columbia, and Mr. Hearon, of Spartanburg. The Committee spent the better part of two days in making a comprehensive inspection of the college, and their report is given on page 89 of this report. The Board of Visitors called special attention to the need of a gymnasium and a library, a building to house the extension service, and better accommodations for the teaching of physics.

With reference to the financial systems of the college, the Board said—

“The Board of Visitors ***** noted with satisfaction the system of accounting seems to be as efficient as anything of the sort well could be, and that every penny of the money which the college receives from whatever source is carefully expended and fully accounted for. The college plant and grounds are splendidly kept and it is nothing less than remarkable so much is being accomplished at such an economy of expenditure. At the same time it is quite clear that the college can no longer depend upon the fertilizer tax for support, and that hereafter the legislature will have to provide for its financial requirements as it does for those of other state institutions. *****

“Clemson occupies a place of its own in the state’s educational system, the importance of which is abundantly attested by the sustained growth of the college and by the records of achievement which its alumni have made for themselves and for their alma mater. Clemson also occupies a peculiar and distinctive place in the life of the state, for over and beyond its teaching obligations, which are very heavy, it has other obligations even more extensive and not less heavy. To it as to no other institution in South Carolina, educational or otherwise, is committed the inspiring duties of conserving and developing all of the state’s

resources and especially the agricultural resources. To it the people of South Carolina look for leadership in all of these matters, nor have they looked in vain. The college has proved itself a mighty force for good. *****

"The Board of Visitors is convinced that those who are in charge of Clemson's destinies are fully alive to their opportunities and obligations. They believe that they will live up to these opportunities and obligations just as far as the resources at their command will admit. For the sake of the young men who are looking to Clemson to prepare them for life, for the sake of the people of South Carolina who have so much to gain from Clemson's military leadership, it is to be hoped that the college will not lack for funds with which to press on in well doing."

The Report of the Board of Health:

The inspection for the Board of Health was made by Mr. E. L. Filby, Sanitary Engineer, and Dr. A. H. Hayden, Epidemiologist. The conclusions of these officers were in the main highly complimentary to the college, although they found here and there conditions which they criticized, and also they made recommendations covering everything from the curriculum to the water supply. Mr. Filby concludes his sanitary report with the following sentence—

"The institution as a whole from a sanitary standpoint is in fine condition, and with remedying of the few points mentioned, the safety and health and happiness of the students should be assured."

Dr. Hayden says in his report—

"The health of the student body during the present college year has been remarkable."

Criticisms of a minor character were directed against the retention of open wells on the campus, the condition of the physics class room, against the milk room at the dairy, and the creamery in the dairy building.

Legislative Visitors:

It is the custom of the college to invite in small groups all members of the General Assembly who have not before visited the college in an official capacity. Of the 1923-24 legislature, there were 140 members who had not before visited Clemson either in the capacity of legislators or members of our Boards of Visitors. Half of this number were invited during the fall of 1922, and the other half were in-

vited in the fall of 1923. Because of the distance from Columbia, it is not practical to have the entire legislature visit Clemson in a body, and we would not be able properly to entertain them if they came. On the other hand, their visits here in small groups of ten to fifteen enables us in two days to show them over the college in a satisfactory manner. I am confident that these visitations have had much to do with the better knowledge of the college by the General Assembly. This better knowledge of the college has had its reflection, as it should have, in the legislation affecting the institution.

Legislative Acts and Appropriations:

We have never had a legislature more sympathetic towards the college and its needs than the General Assembly of 1923. As before stated, I believe this friendly attitude is due in large measure to our having the members here in small bodies and showing them thoroughly the work and plans of the college. During the last ten years, during which period we have been following this plan of inviting members of the General Assembly, we have never had a bill passed which was hostile to the college, nor have we ever had a set back in any request for an appropriation.

In 1914 we were not getting a single dollar from the legislature, and had not asked for help in any of our far-flung activities. Last year our total appropriations for public service were \$269,862.85, and this year for the first time we asked for an appropriation of \$90,856.66 for college work, which appropriation was readily granted.

The following appropriations were made by the General Assembly for 1923—

| | |
|--------------------------------------|---------------------|
| For Extension Service ----- | \$ 110,862.85 |
| For tick eradication ----- | 20,000.00 |
| For livestock sanitary work ----- | 50,000.00 |
| For agricultural research ----- | 50,000.00 |
| For crop pest commission ----- | 10,000.00 |
| For slaughter diseased livestock --- | 4,000.00 |
| For boll weevil territory ----- | 25,000.00 |
| | <hr/> |
| | \$269,862.85 |
| For collegiate instruction ----- | 90,856.66 |
| | <hr/> |
| Total Appropriations ----- | \$360,719.51 |

Also the legislature relieved us from any payment on our debt to the State Treasury during 1923.

In addition to the appropriations listed, the following acts affecting the college were passed—

1. The King-Shepherd Act providing for the inspection and analysis of calcium arsenate and other fungicides. (It will be remembered that a somewhat similar act was passed in 1922, but because of its wording was impracticable of enforcement.)

2. An act creating the office of Recorder at Clemson. (This is a revision of our present law which barred our Magistrate from jurisdiction in Pickens County.)

3. An Act clarifying and strengthening our tick eradication laws, particularly as they refer to the disinfection and movement of cattle in tick infested areas.

4. A joint resolution authorizing the cooperation of Clemson College with the U. S. Department of Agriculture in the establishment of a boll weevil laboratory at Florence, and specifying an appropriation of \$25,000 for the work.

5. An act changing the one-year agricultural scholarships to two-year scholarships.

Board of Trustees:

The Board of Trustees held its three regular annual meetings in November, March and June. No vacancies either in the state-elected trustees or the life trustees occurred during the year under consideration.

PART II. A FISCAL STATEMENT.

1922-23.

Fertilizer Tax:

During the fiscal year under consideration the fertilizer tax reached \$169,717.53. This is the third lowest figure since 1910 and made necessary for the college to avail itself of the authority given by the General Assembly in 1922 to borrow \$150,000 to supplement the fertilizer tax.

Loans from the State Treasury:

Under the Borrowing Act of 1921 we obtained from the State Treasury in October of that year \$112,842.11. Under

the 1922 Borrowing Act we obtained from the same source in November 1922, \$150,000.00. Under the terms of this Borrowing Act at least one-tenth of the principal with interest must be paid on the anniversaries of the loans. One payment was made on the first loan in the fall of 1922, but the legislature of 1923 relieved the college of making any payment that year.

It is to be hoped that the legislature will cancel our notes held by the State Treasurer because there is no reasonable hope of the college being able to repay these loans unless the state makes the necessary appropriation therefor. It would simply burden the state budget unnecessarily for the state to make appropriations with which to pay itself and would not add anything to the net resources in the hands of the State Treasurer. The State Treasurer states that there is no obstacle in the way of cancelling the notes if the legislature will so authorize as the money loaned to Clemson was loaned out of the general funds of the state.

Treasurer's Annual Report:

The Treasurer's annual report, appearing on page -- of this report, gives full information in regard to the expenditures of **all** funds which pass through the hands of the college treasurer.

The following is a summary of the receipts and expenditures for college purposes only, and those public activities which are required by law to be paid from the fertilizer tax receipts, namely scholarships and the fertilizer inspection and analysis.

Summarized Statement.

Receipts and Expenditures from the Fertilizer Tax and Other Funds Available for Collegiate Work.

Resources.

DR.

Income.

| | |
|---|-------------|
| 1. Interest on Clemson Bequest ----- | \$ 3,512.36 |
| 2. Interest on Landscrip ----- | 5,754.00 |
| 3. Morrill & Nelson Funds (U. S.) ----- | 25,000.00 |
| 4. Tuition from Students ----- | 14,815.97 |
| 5. Rents on College Houses ----- | 13,121.01 |
| 6. Interest and Miscellaneous Receipts----- | 8,643.15 |

| | |
|--|---------------------|
| 7. Matriculation & Laboratory Fees ----- | 5,548.04 |
| 8. Privilege Fertilizer Inspection Tax ----- | 169,717.53 |
| Total ----- | \$246,112.06 |

From Other Sources.

| | |
|--------------------------------|------------------------|
| 9. State Loan ----- | \$ 150,000.00 |
| 10. Reserve Fund from 1922.--- | 71,502.87 |
| 11. State Appropriation ---- | 46,175.20*— 267,678.07 |
| Total ----- | \$513,790.13 |

* Part of state appropriation of \$90,856.66 used during last six months of college fiscal year, January 1st to June 30, 1923.

Expenditures.**CR.**

| | |
|----------------------------------|-----------------------|
| Scholarships and advertisements | \$13,889.79 |
| Fertilizer Inspection & Analysis | 27,085.62—\$40,975.41 |

College Operating Expenses:

| | |
|---------------------------------|-----------------------|
| Salaries ----- | \$155,954.35 |
| Coal, Laboratory Supplies, etc. | 95,051.50 |
| Payment on note ----- | 11,284.21 |
| Interest on Note ----- | 6,770.52—\$269,060.58 |
| Equipment for teaching ---- | 15,815.53 |
| Permanent Add'ns & Improv's | 39,027.28— 54,842.81 |
| Total ----- | \$364,878.80 |

| | |
|---|---------------------|
| Reserve on hand June 30, 1923, necessary to carry College during season of small fertilizer sales, July 1st to January 1st ----- | 148,911.33* |
| Total ----- | \$513,790.13 |

* **Reserve:** It will be noted above that the college entered its fiscal year with apparently \$148,911.33 to its credit. However, during the first six months of the year, July 1st to December 31st, the college received no net revenues from the fertilizer tax. The reserve is necessary to carry the college until the fertilizer season begins early in the following calendar year. Approximately \$200,000 is necessary to carry the college during the barren six-months period, and the reserve shown above plus receipts from sources other than the fertilizer tax just about make up that necessary amount.

Report of the Auditor:

The audit of the college books and accounts was made by Mr. L. A. Searson for the State Bank Examiner, and appears as a part of this report. (See page 186). The audit shows total receipts from all sources of \$1,651,151.25, and a total disbursement of \$1,445,389.48, with a balance carried forward of \$205,861.77. This balance was distributed as follows—

To the Credit of—

| | |
|-------------------------------|---------------------|
| College fund ----- | \$148,911.33 |
| Cadet fund ----- | 12,395.74 |
| Revolving fund ----- | 39,984.12 |
| Farm products account ----- | 1,928.71 |
| Student banking account ----- | 2,641.87 |
| Total ----- | <u>\$205,861.77</u> |

The auditor's statement does not include moneys paid in by the Treasurer of the United States for tick eradication, live stock sanitary work and the contribution by the U. S. Agricultural Department for extension service over and above that required of the Smith-Lever Act.

A summary of the funds administered for all activities of the college is as follows—

Summary of All Funds Administered.**Fiscal Year 1922-23.****Expenditures:**

| | |
|---|-----------------------|
| 1. For college purposes ----- | \$ 364,878.80 |
| 2. For agricultural public service ----- | 613,839.12* |
| 3. For revolving accounts ----- | 151,393.54 |
| 4. Cadet funds (board, uniform, etc.) ----- | 237,310.61 |
| 5. Cadet deposits (personal accounts) ----- | 77,967.41 |
| 6. Funds not recorded with Treasurer ----- | 83,141.86** |
| Total ----- | <u>\$1,528,531.34</u> |

* Including hog cholera serum and nursery tag inspection carried on revolving accounts.

** Paid by Treasurer of U. S. on vouchers approved by college officers.

PART III. THE COLLEGIATE WORK.

As stated in a previous chapter, the college work is supported chiefly through the balance which remains on the fertilizer tax after the cost of inspection and analysis has been paid. In 1923 for the first time the legislature made a direct appropriation of \$90,856.66 towards the cost of operation.

For the fiscal year 1922-23 the total expenditure for what might be properly classified as **collegiate work** was as follows—

| | |
|---|----------------------|
| 1. For salaries | \$155,954.35 |
| 2. For labor, insurance, coal, shop and laboratory materials, etc | 95,051.50 |
| 3. For scholarships | 13,889.79 |
| Total for operation | \$264,894.64 |
| 4. For teaching equipment | \$ 15,815.53 |
| 5. For minor improvements and additions to plant | 39,027.28 |
| Total Collegiate Cost | \$ 319,737.45 |

This total is very low in operating cost for a technical college representing approximately less than \$300.00 per student.

Enrollment:

The total enrollment for 1922-23 was 1,603 distributed as follows—

| | |
|---|-------|
| (a) In regular college courses | 825 |
| (b) In special courses | 187 |
| | <hr/> |
| | 1,012 |
| (c) Summer school students (1923) | 591 |
| | <hr/> |
| Total | 1,603 |

The 1,012 students enrolled in the regular session of the college were distributed as follows—

| | |
|--|-------|
| In agriculture | 442 |
| In engineering | 392 |
| In textile industry | 120 |
| In chemistry and chemistry engineering | 17 |
| In architecture | 25 |
| In pre-medical | 16 |
| Total | 1,012 |

Graduates:

The number of graduates receiving the B. S. degree in June 1923 was 134 distributed as follows—

Graduates—Class 1923:

| | |
|---------------------------------|-----|
| In agriculture | 55 |
| In mechanical engineering | 20 |
| In electrical engineering | 25 |
| In civil engineering | 10 |
| In textile engineering | 16 |
| In chemical engineering | 4 |
| In chemistry | 1 |
| In architecture | 2 |
| In general science | 1 |
| Total | 134 |

I would direct special attention to the large percentage of agricultural graduates at Clemson as compared with other colleges. The average number of agricultural graduates since the foundation of the college is 42%. This year the 55 men graduating in that course represented practically the thirty year average. It might be interesting to compare the graduates in agriculture at Clemson with those of other prominent southern agricultural colleges.

Graduates in Agriculture June 1923:

| | |
|--|------------|
| At the Oklahoma A. & M. College | 20% |
| At the Louisiana State University | 23% |
| At the University of Tennessee | 23% |
| At the Virginia Polytechnic Institute | 27.2% |
| At the North Carolina A. & E. College | 28.6% |
| At the University of Georgia | 35% |
| At the Clemson Agricultural College | 41% |
| At the Mississippi A. & M. College | 54% |

Only in Mississippi, a state which has practically no industry but agriculture, is the percentage of agricultural graduates higher than at Clemson.

The fact that next to Mississippi we have the largest percentage of students in the courses of agriculture than any other southern college should be a matter of gratification in a state so largely given over to agriculture as is South Carolina. While not desiring that our other courses maintained at much expense should be barren of students, or that our country boys should be denied full scope for their talents and ambitions, we should always hope that the relative importance of agriculture as the leading industry in our state will be reflected in the number of our students pursuing agricultural courses.

Short Courses:

Certificates were awarded to 14 men who had satisfactorily completed the one-year course in agriculture. Four completed the two-year textile course and seven the pre-medical course.

Certificates of Merit:

Certificates for distinguished agricultural service were awarded to Mr. Bright Williamson, of Darlington, and Mr. T. C. Moss, of St. Matthews.

Summer School:

The 1923 summer school extended from June 11th, to July 21st. The enrollment reached 591 as compared with 478 in 1922. The enrollment was distributed as follows—

| | |
|---|-----|
| Agricultural teachers ----- | 358 |
| Students for make-up and entrance ----- | 117 |
| Federal Board Students ----- | 47 |
| Scholarship boys' club ----- | 56 |
| Cotton growers ----- | 8 |
| Poultry husbandmen ----- | 5 |
| Total ----- | 591 |

Scholarships:

In spite of the hard times the scholarships offered by the college were only partly taken up. Ninety-eight four-year scholarships were vacant and for these scholarships 157 men stood the examinations. Fifty-three passed the examinations and the fiscal inquiry of the State Board of Public Welfare. One applicant who was refused a scholarship successfully appealed to the State Board of Education.

For the fifty-five one-year agricultural scholarships only thirty-eight men applied and twenty-three passed. Only fourteen of those who passed appeared on October 1st to claim their scholarships. It is hoped that the change in the scholarships from one-year to two-year scholarships may stimulate interest in this important work of instruction intended primarily to fit young men who are not able to take a full college course for the business of farming.

Training of Disabled Soldiers:

Upon the retirement of Dr. W. H. Mills from the supervision of the Federal Board students, Mr. M. L. McHugh was appointed to succeed him. It is likely that this work will diminish from this time forward. It may soon be necessary to segregate at some one college disabled soldiers who are now attending several. Otherwise the work cannot be made self-sustaining at the present government allowance per trainee. No doubt all of the colleges will welcome a termination of the sub-collegiate work given to many of these disabled soldiers.

Reserve Officers' Training Corps:

Clemson College has the distinction of having more students in the advanced infantry course of the R. O. T. C. than any other college in the United States. Under the Morrill Act establishing land grant colleges, we have always required the Freshmen and Sophomore classes to take three years of military instruction. As an adjunct to discipline, we have required the same amount of military instruction during the Junior and Senior years.

However, the students who enter the advanced course at the beginning of the Junior year are required to take five hours per week of military instruction, and in compensation therefor the government pays such students the value of the army ration. During all four years an average allowance of about \$18.00 is paid as commutation on uniforms. Practically all cadets physically fit go into the advanced R. O. T. C. course when they reach the Junior Class, and as a result receive during their last two years in college about \$100.00 per session to help defray their college expenses.

Teaching Work of the College:

A general spirit of harmony and cooperation has been apparent throughout the session covered by this report. With reference to this the Board of Visitors made the following comment—

“The Board is impressed first of all with the fine spirit of loyalty which was found everywhere in evidence. They were left in no doubt that the men who are responsible for the conduct of the college have their hearts in their work and are throwing themselves in this work unreservedly. They were impressed too with the splendid cooperation between President Riggs and all of his associates which was plainly to be noted. They wish that it could be generally appreciated throughout South Carolina how admirably all of the different departments of the college, including of course those which have to do with extension work throughout the state, are coordinating and how well they are functioning. They lay stress upon the spirit which they have found prevailing at the college, because they are persuaded that this is a matter of prime importance and that it means much for the college and for the state that those who are engaged in this important work should be giving themselves to it in the way that they are.”

This is the first session under the two term or semester plan, and I am glad to be able to report that the grades are fully as good as those which we had under the three term system. The faculty adopted the rule of sending home at the end of the first semester those who were hopelessly delinquent, and this had a salutary effect.

That the instructional work of the college this year has been of high order is shown by the fact that at the faculty meeting in June to pass upon the Seniors for graduation, not a single one was objected to. Last session ten fell out under the final count.

Salary Scale:

The salary scale at Clemson College is on the average about 20% below that of similar institutions in the country.

In 1922 the Bureau of Education in Washington published averages for 73 colleges and universities, and their figures, together with the figures at Clemson, are given for purposes of comparison. When houses are furnished rent free the value of this perquisite is added to the cash salary.

| | Pres. | Deans or Director. | Profs. | Assoc. Profs. | Asst. Profs. | Instr's. |
|----------------|---------|-----------------------|---------|------------------|-----------------|----------|
| Averages of 73 | | | | | | |
| Colleges | \$8,482 | \$4,250 | \$3,392 | \$2,800 | \$2,300 | \$1,800 |
| Clemson | | | | | | |
| Averages | 6,000 | 3,650 | 2,808 | 2,288 | 2,035 | 1,625 |

In every case it will be noted that Clemson is below the average. No houses or other perquisites go along with positions at Clemson.

It is becoming more and more evident that when vacancies occur they cannot be satisfactorily filled at existing salaries. Men who have been at the college for a long time and have their roots deep in its soil are willing to remain at existing salaries rather than change for a considerable increase.

There would be no advantage and no necessity for increasing the salary of some of the men now on our faculty, because they are not worth any more than they are receiving. However, as we fill their places with better men, the general salary scale will advance. In fact, it is not likely that we can fill **any** position on our faculty with men equal to those we now have for anything like the same salary. Either we will have to pay more money or we will have to replace experienced and efficient men with youngsters who cannot give the service which we require and which our students have a right to expect.

Review of Departments:

The unit of organization at Clemson College is the subject-matter division, such as mathematics, architecture, botany, biology, electrical engineering, mechanical engineering, etc. These divisions are grouped appropriately into seven departments as follows—

Academic; Agricultural; Chemistry; Engineering; Military; Textile; and Student Affairs.

Divisions such as the Library, Treasurer's Office, C. & R. Division, etc., are not grouped into departments, but are directly under the President's supervision.

In the following review of departments it is not attempted to give changes in personnel and other details. Only facts of outstanding interest will be mentioned.

The Teaching Work of Departments:

With the session under consideration the college inaugurated its new entrance requirements of fifteen units with a maximum of two conditions allowed. This higher standard did not in any way hurt our attendance or militate against the admission of students from the rural districts. The latter were permitted to enter the two-year agricultural course, the first year of which has the dual purpose of a vocational course and a course preparatory to entrance into the freshman class. In our freshman class nearly one-half of our students entered with fully fifteen units, and next session this proportion will no doubt be greatly increased.

The Academic Department—(D. W. Daniel, Director):

The Academic Department includes the divisions of English, mathematics, physics, history and economics, and sociology. It is more directly related to the public school system of the state than are the purely technical departments.

This department is greatly handicapped by the lack of suitable space for the work in physics. This subject, so fundamental to all courses, and second only in importance to English, is unsuitably housed and very much crowded. When the addition to the chapel is built the basement of this addition will give ample space for physics and free the first floor of the main building for purely administrative purposes.

The death of Prof. W. S. Morrison, the senior member of the department, and one of the original faculty of the college, marks the passing of one of the most picturesque and unique teachers in the organization. He will perhaps be remembered longer by Clemson graduates than any other teacher under whom they sat. His homely sayings, his pugnacious temperament and his genuine interest in Clemson men, serve to differentiate him from the less colorful members of the faculty. Prof. Morrison was one of the most faithful and conscientious teachers in the organization and one of the outstanding ties between the alumni and the college.

**The Agricultural Department—Resident Teaching—
(F. H. H. Calhoun, Director):**

It is gratifying to quote from Director Calhoun's report the following paragraph—

“For the first time since I have been director of the Agricultural Department, I can say without qualification that the attitude of the students to their work has been almost ideal. As I look back over the years I have been at Clemson, I feel that in no year, with the possible exception of 1908, has the application, loyalty and cooperation of the students been more in evidence.”

Of all the departments of instruction I think we can take more credit for the agricultural department than for any other—not because it is better than the others, but because it is so much better than the agricultural departments in other Southern A. & M. colleges. The teaching force of this department is better perhaps than it has ever been.

I have already referred to the gratifying percent of students in the agricultural courses. This number will always fluctuate as in other courses, depending chiefly upon the opportunities ahead of the agricultural graduates. Good salaried positions as county agents, teachers of agriculture in high schools, specialists in extension and teachers and research workers in colleges and government departments, have in recent years stimulated interest in our agricultural courses by giving to the graduates a profitable outlet. If farming were the only outlet for agricultural graduates, we would have a great decline in numbers, because there is yet that irreconcilable conflict between the socialistic view which would have a nation of small farmers, and the business view, so typical of America, that only through large units can brains and energy be properly compensated.

The college cannot control the number of students selecting the various courses nor direct them in their life work upon leaving college, but it can and ought to guarantee the quality of the work done, and it is because of the quality of this work in our agricultural department that we may well be proud.

The agricultural department is still badly handicapped by lack of sufficient class rooms and laboratories, and

these must soon be provided either by an addition to the present agricultural hall, or preferably by a new building which will house the extension and horticulture.

The inauguration of work for the master's degree which will be begun with next session (1923-24) marks another step forward and will add much to the prestige and usefulness of the institution. This is especially true of certain lines of agricultural study. Some of these lines—for instance horticulture,—is in a measure a local problem, and for that reason advanced work cannot be pursued to equal advantage in an institution in a different part of the country.

The Engineering Department—(S. B. Earle, Director):

The engineering department has been greatly strengthened by the new civil engineering testing laboratory and the hydraulic laboratory in connection with the mechanical engineering work. It is the purpose of this department, in the civil engineering course, to stress the work of road building, thereby making an outlet for our graduates to serve the state in a very important capacity. The new location of the wood shop, the new class rooms provided in the site of the old mechanical laboratory, and the adaptation of the third story of the engineering building for architectural work are all improvements which have increased the efficiency of this already highly efficient and satisfactory department. In his report of the year's work, Director Earle makes this comment—

“The year's work taken all together has been very satisfactory. More work has been accomplished by the students than usual, and also a better grade of work. It seems to be the concensus of opinion that the change from the three term to the two semester plan has been very beneficial. Better grouping and distribution of the work has been obtained.”

The Military Department—Major Madison Pearson, Commandant):

The military department has done its work of this session with unusual smoothness. The college again was rated by the War Department as a “Distinguished College.” The military discipline is at the basis of efficient operation of the college, contributing to promptness, regularity and economy in time. The Commandant has had dur-

ing the session seven commissioned officers and three army sergeants. The entire staff has been engaged in teaching the military science of the R. O. T. C. courses, and the commissioned officers have all had a part in the administration of discipline.

Only twenty cadets in the entire corps of cadets were not enlisted in the Reserve Officers Training Corps, and we still maintain the distinction of having more men in the infantry branch of the advanced course than any other college in the nation. Likewise, I doubt if there is another college which has as large a percent of its junior and senior class voluntarily entering the advanced course. Our enrollment is practically 100% every session.

Military discipline seems to me, (perhaps because I know that system best), the ideal one to lubricate the work of the college and cause it to run in that manner which has elicited so much praise from every inspecting body that has ever been here. It is true that other colleges get along without this discipline, but I doubt if they can show the same efficiency as can Clemson. I am one of those who believes that the advantage which we see Clemson men enjoy when they go into business and come into competition with the graduates of the greatest universities of the country comes from their having lived for four years under military discipline. The characteristics of a military man are courtesy and loyalty, and the feeling that whatever is ordered or even requested must be done, whether it can be done or not. The value of such qualities in any business cannot be over-estimated.

The Textile Department—C. S. Doggett, Director):

No department of the college has grown more rapidly during the last five years than has the Textile Department. Beginning 1918-19 and ending with the past session, the number of sophomores, juniors and seniors in the regular four-year textile course has been as follows: 23; 50; 58; 66, and this last session, 79. In the special and short courses the numbers for the same years are 3; 10; 40; 44, and last session, 41. The totals would be 26; 60; 98; 110, and 120. From these figures it will be seen that in five years the textile department has more than quadrupled its number of students.

While possessing a good equipment, the textile department is not well designed for teaching purposes. It lacks quiet rooms for lectures. As soon as we are able we must make a substantial addition to this department. Next to agriculture, the textile industry is the most important in our state, and we must train its leaders.

We have a two-year course in textile industry, but our degree course in textile engineering is predicated upon the same degree of engineering work and the same amount of cultural work as are our courses in civil, electrical and mechanical engineering.

During the session the government has continued its research work with Prof. W. G. Blair and a staff of five experts. This work is under the Bureau of Markets of Washington, and the work as carried on is not only of great service to the cotton industry, but is a stimulus to our students in textile engineering.

As yet the value of the textile department in furnishing leaders for the cotton mill industry of the state has not been fully appreciated by the cotton manufacturers. If it were, we should have every year from every mill in South Carolina a number of promising young men, who having mastered the practical details of cotton mill work, would be sent here for thorough training in textiles and related lines. It is gratifying to note that the Cotton Manufacturer's Association of South Carolina at their recent meeting, (November, 1923), endorsed most heartily the closest co-operation between the Association and the college.

The Chemistry Department—(R. N. Brackett, Director):

This department is charged with the teaching of chemistry and the work of fertilizer inspection and analysis, and also conducts the chemical investigations for the S. C. Experiment Station.

This department has an excellent faculty and staff of workers, and is well equipped for its several lines of work. More than in any other department, the graduates in chemistry have had the ambition to obtain higher degrees at other institutions, and those who have pursued post-grad-

uate work have without exception given a good account of themselves.

Dr. R. N. Brackett, the director of this department, is completing this year his thirty-second of service. He is the oldest living member of the Clemson faculty now in active duty. His long connection with the institution has been marked with efficiency and unfailing loyalty.

The Treasurer's Officer—(S. W. Evans, Secretary-Treasurer):

(See report on page 65 of report.)

No department of the college deserves higher praise than the Treasurer's Office. Its accuracy and high standards of workmanship have been invariably commended by every auditing board and every inspecting body which has come to the college. With three assistants, the Treasurer performs an immense amount of work made necessary by the detailed itemization of the Board's budget of college expenditures. The total funds handled by the Treasurer during the fiscal year 1922-23 amounted to \$1,651,251.25, these expenditures being represented in not less than twenty-five thousand separate transactions. The report of the Treasurer will be found in the latter part of this report, and is an illuminating document in regard to the many lines of Clemson's expenditures.

The Registrar's Office—(J. C. Littlejohn, Registrar):

The Registrar's office has full authority in the matter of admitting students under the rules governing entrance, keeping of the records and in general in administering the faculty rules regarding all class matters.

The Registrar is a man of unusual ability for this work and his office operates with great smoothness and efficiency. His methods of admission, matriculation, grade recording and the keeping of records of students and graduates has often been studied by other institutions and favorably commented upon and in some cases adopted.

The Library—(Miss Katherine B. Trescot, Librarian):

At present our Library contains about 30,000 bound volumes, the majority of which are devoted to agriculture

and other scientific lines. Plans for the coming session provide for the establishment of a special department of library reference. This division of the general library into a reference library and a reading library is made necessary by the increase in the demands for study along special lines. A librarian particularly trained in reference methods will be employed for the new work.

Public Utilities:

In addition to the various teaching departments, the college has to maintain the usual public utilities found in a small city including heat, light and water plants, pumping stations, water and sewerage distribution, telephones, etc. The cost of our public utilities, including the upkeep of buildings and grounds, is approximately \$60,000.00 annually.

The campus, one of the greatest assets of the college, has been greatly improved by the recent planting of shrubs and the laying of walks and curbing. An avenue of oaks has been planted from the edge of the campus to the bounds of the college grounds to the east.

The construction and repair division has kept the college buildings and residences in good repair. The total cost for this work amounts to approximately \$12,000. The receipts from the rents of residences is approximately \$11,000 annually, nearly enough to pay the total repair bill for both the residences and the public buildings. The present method of upkeep of the sixty or more residences is to paint all buildings on the outside every fifth year and on the inside every seventh year.

In addition to keeping up the repairs on existing buildings, the superintendent of construction and repairs represents the college in new construction given out by contract.

The capacity of the main power station of the college has been increased by the addition of a turbine generator and an extra boiler at a cost of approximately \$25,000. These changes and additions will meet the water, power and light demands of the college up to an attendance of at least 1,500 students.

PART IV. STUDENT LIFE AND INTERESTS.

General Statement:

I am glad to be able to report to the Board that we seem to be passing out of the fog of war psychology into a brighter day. It is not the same day that we once had, but this year and last the pinch of poverty and the sacrifice which parents had to make to send their boys to college brought about a seriousmindedness conspicuous for its absence since 1918. The graduating class of 1923 was the freshman class of the 1920 revolution. It might be interesting to note that only two of the sixteen men who comprised the freshman and sophomore committees of complaint in 1920 went on to graduation. As is usual in such cases, members of student committees which lead insurrection are generally those who have little to lose. The class of 1923 showed an excellent spirit of good will and cooperation. At no time during my administration of the past ten years have we had a senior class in every way more cooperative, more loyal and in general more satisfactory than the last of the classes which were involved in the troubles of 1920.

The Cost of Education at Clemson:

It has always been the purpose of the Board of Trustees to keep the cost of education at Clemson as low as possible consistent with reasonable contentment and efficiency.

The following is an exhibit of the required charges. The cost of books, which varies from \$25.00 to \$35.00, depending upon the student's class and course, is not included—

For Session of Nine Months—1922-23.

| | |
|--|-----------------|
| 1. Board at \$16.00 per month | \$144.00 |
| 2. Laundry at \$1.33 1-3 per month | 12.00 |
| 3. Heat, light and water at \$2.10 per month | 18.90 |
| 4. Medical fee at \$1.25 per month | 11.25 |
| 5. Incidentals at \$1.00 per month | 9.00 |
| 6. Matriculation fee | 3.00 |
| 7. Laboratory fee | 2.25 |
| 8. Breakage fee | 3.00 |
| 9. Student activity fee | 12.00 |
| 10. Uniforms (maximum first year) | (*) 60.43 |
| Total for nine months | \$275.83 |

* Not more than half of this amount after first session.

This makes the cost per day for the session of 270 days approximately \$1.02. (Tuition, \$40.00, is not included in the above cost, as only a fraction of the student body pay it.)

The R. O. T. C. students in all classes receive from the War Department an average of \$18.00 per session as commutation for uniform, and juniors and seniors in the advanced R. O. T. C. course receive in addition 30 cents per day as commutation for subsistence—a little more than half of what the college charges for board. With these credits applied, and not counting scholarships, it will be seen that education at Clemson has been brought down to a very low figure, averaging about \$210.00 per session for those who do not pay tuition, and \$250.00 for those who do. For those holding scholarships the average cost is about \$110.00 per session.

The Cadet Fund:

Not a dollar of the money paid by students for their living expenses is used by the college. Any accruing balance is carried forward for the benefit of the account in succeeding years. The following is a statement of the Cadet Fund for the fiscal year 1922-23.

Cadet Fund. 1922-1923.

| | Received | Expended | Balance | Deficit |
|---------------------------------|---------------------|---------------------|-------------------|--------------|
| Subsistence | \$143,708.82 | \$140,651.26 | \$3,057.56 | \$ |
| Room, heat, light & water | 15,140.95 | 15,176.20 | ..... | 35.25 |
| Laundry | 12,715.81 | 12,229.12 | 486.69 | ..... |
| Hospital | 11,665.77 | 10,267.80 | 1,397.97 | ..... |
| Uniforms | 29,672.20 | 29,672.20 | ..... | ..... |
| Incidentals | 7,903.37 | 6,817.66 | 1,085.71 | ..... |
| Activity Fees | 11,448.92 | 11,448.92 | ..... | ..... |
| Breakage | 3,521.45 | 3,521.45 | ..... | ..... |
| Diplomas | 475.05 | 418.03 | 57.02 | ..... |
| | \$236,252.34 | \$230,202.64 | \$6,084.95 | 35.25 |

Net balance on 1922-23 business ----- \$ 6,049.70

Summary to July 1, 1923:

| | |
|--|--------------------|
| Brought forward July 1, 1922----- | \$13,454.01 |
| Bills payable, replacements, etc ----- | 7,107.97 |
| | \$ 6,346.04 |
| Balance on 1922-23 business ----- | 6,049.70 |
| Carried forward, July 1, 1923 ----- | \$12,395.74 |

The Cadet Mess:

Clemson has one of the best kitchens and messhalls to be found anywhere in the country. After the fire of 1921 the plant was rebuilt of sufficient size to meet any reasonable future demands. The messhall and kitchen have tiled floors, are screened, well lighted, heated, and ventilated, and in every way prepared to give the best service for the money paid by the students.

The State Board of Health, which made an inspection in the fall of 1922, complimented this detail of the college organization in the highest terms. Commenting on the messhall Dr. Hayden, the State Epidemiologist, says—

“The messhall is in excellent condition of cleanliness and great care in this respect was evident. Kitchen, pantry, commissary and laundry all looked spick and span and were in every way attractive and indicated close attention and interest taken in the health and comfort of the students.”

Mr. Filby, the Sanitary Engineer, says in the same report—

“The kitchen is a model one and the best that the writer has observed. The tile floor enables the kitchen to be scrubbed three times a day and the messhall twice a week. Plenty of fresh air, sunlight and white paint present an attractive interior. The employees wear clean white suits. Modern machinery is in use. Steam tables and electric dish washing machines, steam dryers, etc., facilitate handling of the food and utensils. ***** No odor was noticeable in the cold storage rooms. The bake shop is modern and clean. ***** Most of the storage rooms are underground but they are free of odors and growths.”

Barracks Accommodations:

Our increase in attendance has brought about additional problems in the matter of room accommodations. In a great many rooms we are compelled to house three students where we should have only two. Not only do three beds crowd the rooms, but such an arrangement is not good from the standpoint either of health or of study.

The additional wing for the messhall will also provide fifty-seven student rooms, and will in a measure, but not altogether, relieve the congestion. A new dormitory is imperatively needed to properly house our present

student body and provide for the increased demand which confronts us every year.

The Cadet Hospital:

The health of the student body during the session has been unusually good. There were no deaths and only one case of serious illness. The number of students on sick report was less than one half of the number during the preceding session. The only disease which approached epidemic form was conjunctivitis, (pink eye) during the spring of 1923.

Of the total number on the sick report, (7,808,) 418 were admitted to the hospital. The others were not sufficiently sick to need hospitalization.

Our hospital, built thirty years ago, while meeting our needs, is by no means a credit to the college or to the state, and as soon as possible should be replaced with a modern and up-to-date structure which would cost approximately \$75,000.00.

Discipline:

As stated elsewhere in this report, the conduct of the cadet corps during the session has been excellent. The demerit record of the corps was unusually good, 39.6% receiving no demerits and a total of 82.5% receiving below the limit which would debar them from the honor roll. Only three exceeded the limit of demerits and were required to withdraw.

The Discipline Committee held very few trials during the session. Only one cadet was suspended and three dismissed. Considering the increased numbers this is an excellent record.

Regarding military discipline, this is one of the most important features of the college. Not only does it insure promptness, obedience and courtesy, but it insures as well a time in every day for class work and study. At all times a student is present or accounted for, and it is the policy of the college not to allow student activities or leaves of absence to interfere either with class work or study hours. From 4:00-7:30 p. m. is given to the students for their use in the development of their special interests, but the re-

mainder of the day is claimed by the college for class work and study.

Religious Influences:

Perhaps in no college in the state is a greater effort made to foster the religious and spiritual side of student life.

In the first place, the college contributes to the salary of the four resident ministers and to the Y. M. C. A. Secretary in order that the highest grade men may be available for the preaching and pastoral work among the students. Every cadet is required to attend church on Sunday mornings and a fifteen minute devotional service in chapel every week morning except Saturday. The chapel service consists of Bible reading, the singing of a hymn and an invocation, concluding with the Lord's prayer in which the students join. Clemson has its own hymn book, and perhaps no student body in the state knows or sings so well as many hymns as does the corps of cadets of this institution. The ministers of the various churches have free access to barracks and do pastoral work with the students in their rooms as well as in the churches. Out of a student body of 971 men, at the time the census was taken 89.7% were church members.

Under the auspices of the Y. M. C. A. Bible classes are conducted in barracks every Sunday, and these classes have an enrollment of 550 students. These classes are largely led by students themselves. Likewise, ten morning watch groups engage in prayer service in barracks every morning. The Y. M. C. A. conducts vesper services every Sunday evening at which local ministers or visiting preachers or laymen speak. There is also a friendship council whose aim is to render all possible help, moral and otherwise, to students in need of help or advice. Student delegations are sent to all religious gatherings where the college should be represented, and a substantial delegation of students attends the Blue Ridge Conference school every summer.

In addition to these activities, the Y. M. C. A. conducts special services and meetings in order to interest students in the various religious callings.

The Y. M. C. A. building made possible through the gen-

erosity of Mr. John D. Rockefeller, is probably the most complete building of its kind in the south. Its present value is not less than \$150,000. It is the social and religious center of the community as well as of the college.

Naturally also, a great many members of the Faculty are interested in contributing to the religious life of the students. A large number of the Sunday School teachers come from the faculty, as do some of the Bible class leaders. It should be remembered too that our present curriculum contains as an optional subject the study of the English Bible.

As an indirect influence for good, there might be mentioned the very wise requirement of the Trustees that every faculty member shall attend the morning chapel service. This provides daily at Clemson the rather unique spectacle of having on the rostrum practically the entire corps of teachers.

Recreation and Student Affairs:

Clemson College is one of the first to set up the control of intercollegiate athletics as a part of the regular college organization. At the December, 1921, meeting of the Board of Trustees, By-laws were adopted by which athletics was organized as a regular division of the college in the Department of Student Affairs. The Athletic Director or Coach is a full professor and member of the faculty, the only difference in his status being that he is not paid from college funds, but from the student activity fee and the receipts of athletic contests. These receipts, however, are handled through the Treasurer's office and disbursed just as are other college funds.

The student activities, including athletics, publications, dances, etc., are under the control of the Director of Student Affairs, a college officer of full professorial rank who gives his entire time to the administration of these matters, and also to the administration of the expenditure of the cadet funds received for subsistence and other living expenses. This is a most desirable arrangement and is coming to be followed by other institutions which realize the need of close official supervision of what constitutes the most dynamic part of the college life.

PART V. THE PUBLIC SERVICE.

Clemson College is a great public service corporation of which the collegiate work is only a part.

The non-collegiate public service work of the college may be classified under the following heads—

1. Agricultural research.
2. Agricultural extension service.
3. Agricultural regulatory work.

The total budget for these lines of public service is shown in the following table. It will be noted that the total sum is \$723,021.50, although the expenditures from state appropriations are only \$269,862.85 of this total. In other words, South Carolina is getting nearly three dollars from other sources for every dollar which it appropriates. The total state appropriations for those lines of public service in which 85% of our people are vitally interested, is less than 4% of the total legislative budget. This represents the entire investment by way of state appropriation in the development of South Carolina's greatest business, the business of agriculture.

Expenditures for Non-collegiate Public Service Fiscal Year 1922-1923.

| No. | ACTIVITY | Appropriations | Appropriations | Funds. | Sales, etc. | Totals |
|--------------|---------------------------------|----------------|----------------|-------------|--------------|--------------|
| | | State | U. S. | U. S. D. A. | Counties, | |
| | | (a) | | | (g) | |
| 1. | Agricultural Research | \$ 51,898.45 | \$30,000.00 | \$..... | \$ 24,243.21 | \$106,141.66 |
| 2. | Boll Weevil Research | 12,950.73 | ..... | (j) | ..... | 12,950.73 |
| | | (b) | | | (h) | (i) |
| 3. | Extension Service | 110,862.85 | 156,014.49 | 31,280.95 | 106,224.24 | 404,382.53 |
| | | (c) | | | | |
| 4. | Live Stock San. Work | 51,285.58 | ..... | 17,131.10 | ..... | 68,416.68 |
| | | (d) | | | | |
| 5. | Tick Eradication | 31,029.89 | ..... | 34,729.81 | ..... | 65,759.70 |
| 6. | Hog Cholera Serum ..... | ..... | ..... | ..... | 27,580.84 | 27,580.84 |
| | | (e) | | | | |
| 7. | Slaughtered Live Stock | 2,573.74 | ..... | ..... | ..... | 2,573.74 |
| | | (f) | | | | |
| 8. | Crop Pest and Diseases | 8,130.00 | ..... | ..... | ..... | 8,130.00 |
| 9. | Fertilizer Insp. and Anal. .... | ..... | ..... | ..... | 27,085.62 | 27,085.62 |
| 8. | Crop Pests and Diseases | 8,130.00 | ..... | ..... | ..... | 2,130.00 |
| TOTALS | | \$268,731.24 | \$186,014.49 | \$83,141.86 | \$185,133.91 | \$723,021.50 |

Note:—Appropriations for calendar year 1923:—(a) \$50,000.00; (b) \$110,862.85; (c) \$50,000.00; (d) \$20,000.00; (e) \$4,000.00; (f) \$10,000.00; (g) Sale of Farm Products; (h) \$106,224.25 from counties and misc. sources; (i) \$126,744.33 for Home Demonstration Work by Winthrop College; (j) Government expenditures not known at writing of this report.

1 and 2. Agricultural and Boll Weevil Research— (H. W. Barre, Director):

(See Report on page 119).

Agricultural research is at the basis of agricultural teaching and agricultural extension. Although it lacks the popular appeal of extension or of regulatory service which reach directly the farms of the people, yet without agricultural research there would be little to extend through the extension service and little known of how to combat plant and animal diseases and insect pests.

The appropriation for all lines of agricultural research work, including boll weevil research, are shown in the foregoing table from which it will be noted that out of a total for this purpose of \$119,092.39, South Carolina appropriated \$64,849.18. This appropriation was used largely in the support of the branch stations at Summerville and at Florence.

The Agricultural Research work includes—

1. The parent experiment station at the college, including the college farm and the college laboratories in the agricultural department.
2. The branch stations located at Florence and at Summerville.
3. The cooperative agricultural research carried on with individual farmers in different parts of the state.

A full account of Research activities is contained in the admirable report of the Director of Research, (page 119) Probably the most important research work from an economic standpoint consists in the fertilizer experiments which for many years have been carried on under ideal conditions at the Florence Station. The discoveries made here as to the best type and amount of fertilizers to be used probably saves the farmers of South Carolina every year on their million dollar bill for fertilizers more than the cost of op-

erating this station for decades. Research along lines of agricultural problems of state-wide importance can be made a very profitable investment even when only a little is accomplished. For instance it is estimated that the discovery of a boll weevil control method which would add only one more boll of cotton to every cotton stalk in South Carolina would add a half million dollars to the wealth of the state. The work of the station in developing wilt resistant varieties of cotton, notably the Dixie-Triumph, is probably worth to the state every year the cost of research for a decade.

Probably the most important research work carried on during the session is the boll weevil research work at the Florence Station. This work has been developed and supplemented by work at the Clemson and Coast Stations, and on farms in a dozen counties. The results of this research appear in a special bulletin which has been prepared and distributed. Already important conclusions have been reached. But probably even more important results await further investigation. The difference in temperature and rainfall make it impossible to draw final conclusions from one year's work. In order that the results may be authoritative, they must cover a number of years under the usual variations of soil and climate. In the end there is no question but that science will evolve means of controlling the boll weevil and enable cotton to be produced profitably.

2. Extension Service—(W. W. Long, Director):

Report on page 92

The total funds disbursed for extension service are shown in the preceding tabulation to be \$404,382.53. Of this amount \$31,280.95 was disbursed by the Treasurer of the United States and \$106,224.24 by county treasurers. In both cases the vouchers were approved by our Director of Extension. Of the total amount expended for extension service, Winthrop College acting as our agent, expended \$126,744.33 for Home Demonstration Work for women. Needless to say this work was done with that thoroughness characteristic of every task which Winthrop undertakes.

The Smith-Lever Act was accepted by the legislature in 1914. The required state appropriation under this act increased annually from 1914 until a maximum of \$110,-

862.85 for the fiscal year July 1, 1922 was reached. At this annual figure it will continue. Under the Smith-Lever act the federal government was to put up an amount equal to the state's contribution plus \$10,000. Due however, to additional appropriations made during the war period and continued since, the Smith-Lever act is now yielding per fiscal year \$156,014.49. In addition the U. S. Department of Agriculture made an additional contribution to the extension work of \$31,280.95.

The extension service is becoming more and more a vital part of the state's agricultural life. In every agricultural emergency and for every kind of agricultural service, the people turn to the college as their first and authoritative source of help and information. In all state-wide movements for agricultural improvement, and especially during the past year in the organization of state-wide marketing associations, the extension service has rendered unique and valuable service.

During the year under consideration the policy of decentralization has been followed to the extent of organizing at each of the three district headquarters a staff of specialists to work in the particular district. This has resulted in greater economy in traveling expenses, and in bringing the specialists more directly in contact with the county agents and the farmers whom they have to serve.

Mr. Long's report covering the extension service for the year begins on page 92 of this report. Its reading must convince any one of the value of the extension service, never greater than at times of depression or demoralization among our farmers. So thoroughly is the extension service entrenched in the confidence of the people that our greatest difficulty today is in meeting the many demands made upon the agents and upon the specialists.

The greatest task in the extension service will always be the selection of satisfactory men for the positions of county agents. The value of a good agent cannot be estimated in money, and any salary is too great for an agent who is a misfit. Only through a course of years and by careful selection based solely upon merit will each county be supplied with just the type of man needed. It is the policy of the extension force to donate \$1,500 to the salary of

each county agent. The total salary which the agent receives depends upon the additional fund from the county. In county agents as in everything else, the higher salaries attract the best men.

3. Regulatory Service:

Clemson College is the agent of the legislature in carrying on practically all of the public service which has an agricultural background, and including those lines of regulation which are not always popular, but which are necessary in the protection as well as the development of an agricultural industry. Because the college is a non-political and scientific organization, it is better prepared to do the agricultural regulatory work than any other agency in the state. The county and home demonstration agents representing the extension service and located in every county of the state, constitute the eyes and ears for the regulatory officers in combating live stock and plant diseases and insect pests.

Most colleges dislike regulatory service because of its police features. Clemson College, however, has felt that the benefits to agriculture were sufficient to justify the legislature in making the college its agency, even in lines of work which must of necessity make some enemies of the institution.

The regulatory service of the college includes the following lines—

- (a) Fertilizer inspection and analysis.
- (b) Control of crop pests and diseases.
- (c) Tick eradication.
- (d) Live stock sanitary work.

(a) Fertilizer Inspection and Analysis—(R. N. Brackett, Chief Chemist, H. M. Stackhouse, Secretary):

(See Reports, pages 146 and 148).

Under the laws of the state the Board of Trustees is charged with the inspection and analysis of commercial fertilizers sold within the state. A committee of the Board of Trustees known as the "Board of Fertilizer Control" gives special oversight to the enforcement of the fertilizer laws. Mr. J. E. Wannamaker, of St. Matthews, is the Chairman of this Committee.

The work of inspection is under the immediate charge of Mr. H. M. Stackhouse, Secretary of the Board, and the cost is paid from the fertilizer tag tax. The analysis is done by skilled and experienced chemists in the chemistry department under the supervision of the Chief Chemist, Dr. R. N. Brackett. Full reports from both of these officers are to be found with this report.

Mr. Stackhouse's report of the 1922-23 sales shows 646,695 tons of fertilizer and 32,000 tons of cotton seed meal. The total tonnage was 678,695 tons as compared with 507,068 tons in 1921-22 and 616,280 tons in 1920-21. The total number of samples analyzed was 1,372 as compared with 769 in 1921-22.

(b) Crop Pests and Diseases—(H. W. Barre, State Pathologist; A. F. Conradi, State Entomologist):

(See Reports on page 165).

The Crop Pest Commission having supervision of the work is constituted under the laws of the state to safeguard the agricultural interests against the importation of diseased seed, nursery stock and the introduction and spread of insect pests and plant diseases. It is the plant board of health for South Carolina. The Agricultural Committee of the Board constitutes the Crop Pest Commission, and Mr. J. E. Wannamaker of St. Matthews is the Chairman.

Never before have the fungus and bacterial diseases of plants taken a larger toll, and never have insect pests been more active and destructive. The plant disease survey of the U. S. Department of Agriculture estimates the loss by plant diseases to South Carolina on its seven major field crops at more than twenty million dollars annually. Not taking into account the damage wrought by other insects, which is heavy, especially in the trucking sections of the state, the loss to the cotton crop alone due to the boll weevil probably represents double the amount of the figures above given. Nothing today stands between the farmers and ruin except the scientific men who are doing research work to discover methods to combat plant disease and insect ravages. The State Entomologist and the State Pathologist and their assistants keep up the defenses against in-

vasion and devise new methods to fight new enemies which break through and enter the state.

Any one unfamiliar with the work of the Crop Pest Commission will be interested and astonished to read of its many activities in the full report which is appended hereto. Probably no investment of \$10,000 by the state brings larger returns than the appropriation which supports this work.

(c) Tick Eradication—(W. K. Lewis, State Veterinarian):

(See Report on page 178).

The remaining stronghold of the cattle tick is in the coastal plain section of the state. Gratifying results were obtained in those counties and areas where the stock law was observed. In many sections, however, no effort was made on the part of live stock owners to keep up their stock, and as a result no substantial progress was made in tick eradication. Unfortunately the tick eradication laws lack the necessary teeth for their enforcement. The following is quoted from the State Veterinarian's report—

“The tick infested areas of the state are confined to the counties in the coastal plain region. As the stock law is not being generally observed, in those counties and our funds for conducting this class of work is limited, we have concentrated our efforts principally on premises and areas where the cattle were confined under fence. We also conducted the work in areas where the stock law was not observed in order to protect certain areas that were free of ticks. With a few exceptions we met with very little opposition and satisfactory results were obtained, especially in those sections where the cattle were confined to the owners' premises, which enabled us to get all of them disinfected regularly.

“It is to be regretted that a large majority of the owners do not grow sufficient food stuffs to carry their cattle through the winter months, and as soon as the crops are gathered the cattle are permitted to roam at will, many become tick-infested and reinfest the premises that have been freed of ticks the previous season. This accounts for the necessity of continuing the work year after year in such sections until the last tick has been eradicated.

“We met with the greatest opposition in the Cottageville, Fire Hill, Big Bay and Salkehatchie sections of Colleton county. We prosecuted several cattle owners who wil-

fully violated the law, requiring the regular disinfection of their cattle, but were successful in obtaining convictions in only a small percent of the cases. Four of the convicted parties have appealed to the higher court, and we regret to state are being represented by leading lawyers of the county. The lack of moral support on the part of the leading citizens of Colleton county is very deplorable and has always been a great drawback to the work in that county. If we do not meet with a better spirit of co-operation next season we would deem it advisable to suspend the work entirely until such time as the cattle owners and citizens accord us their full support.

"We have suspended the work in that portion of Berkeley county exempted from the provisions of the stock law by the 1923 General Assembly and will not attempt systematic work in that area until the expiration of the exemption and the owners place their cattle under fence and assure us of their full cooperation."

"The benefits derived from tick eradication are very apparent in all sections where the work has been completed. The farmers are paying great attention to the "breeding up" of their herds and the development of dairying in many sections is not only very noticeable, but profitable. There are numerous pure bred herds of both beef and dairy types in sections that could not have been maintained a few years ago on account of ticks."

The expenditures for this work from January 1st to October 31st, 1923, were as follows—

| | |
|--------------------------|-------------|
| From State funds ----- | \$18,001.90 |
| From Federal funds ----- | 41,734.41 |

It will be noted that the federal department has generously contributed over two dollars for every dollar that the state has expended.

(d) Live Stock Sanitary Work—(W. K. Lewis, State Veterinarian):

(See Report on page 178).

The live stock sanitary work includes tuberculosis eradication, hog cholera control, the investigation and control of contagious outbreaks, and quarantine activities against the introduction of diseased live stock.

This work is supported by an annual appropriation of \$50,000. The headquarters for the work is the Liberty

National Bank Building, Columbia, S. C. Here the state veterinarian has his office, and the assistant state veterinarians not stationed at strategical points in the state, work out from Columbia. Here too a laboratory is maintained for the purpose of making tests in order to confirm the diagnoses made by the field veterinarians. In this laboratory is carried on important research work relating to the parasites which are to be combatted in South Carolina.

The force that carries on this work consists of the state veterinarian, jointly employed and paid by the college and the U. S. Department of Agriculture, ten veterinarians stationed at different points in the state, eight veterinarians and inspectors having supervision in the tick eradication work, and twenty-six private veterinarians who act as deputy veterinarians on a per diem basis.

The scope of the work may be visualized by the following data—

Number of investigations conducted -----5,192

Miles traveled in answering calls for service ----91,405

The magnitude of the tubercular work will be appreciated when it is stated that 2,164 herds were tested during the year for tuberculosis. In these herds were 17, 926 dairy cattle, of which number 128 were found to be tubercular and were killed. Since November 1, 1917, 54,910 cattle have been tested and 977 found to be tubercular. Since the transmissibility of tuberculosis from the dairy cow to the human is no longer doubted, this work is of great importance from a public health standpoint.

The treatment of hogs for cholera is another one of the large activities carried on by this office. During the past year 59,691 hogs were treated. The total value of the serum and virus and other biologics which were distributed on a cost basis amounted to \$31,656.51.

The sale of hog cholera serum is handled on a revolving basis, no appropriation being required for the purchase of the serum, this being sold to farmers at cost. The treatment of the hogs and the control of outbreaks of cholera are handled by the assistant state veterinarians and their deputies and assistants, the double treatment being now advocated. Thru this preventive measure the outbreaks of hog cholera and their severity have been greatly lessened.

CHAPTER II. APPROPRIATIONS FOR 1924.

PART 1. APPROPRIATIONS FOR COLLEGE WORK

For nearly a third of a century Clemson College has been operated on the fertilizer tax. In 1915-16 when this source of revenue greatly declined, a loan of \$62,400.00 was made. This loan was repaid during the following three years. During the period of 1918-20, the costs of college operation greatly increased, and following the year of maximum receipts, 1920, the fertilizer tax again fell off to such an extent that it was necessary for the legislature to supplement the college resources either by a loan or by an appropriation. In 1921 a loan of \$112,842.11 was granted, and again in 1922, \$150,000.00. When it became obvious that the college would require every year a supplementary income, the legislature in 1923 wisely abandoned the method of having the State Treasurer lend the college money and made a direct appropriation instead.

The following table will be of interest as showing the growth of the fertilizer tax on the one hand and the college attendance on the other. The necessity for the loans and for the appropriations which have been made is easily apparent when this table is studied. As a matter of fact, appropriations would have been much sooner necessary, but for the fact that during the first five years of the period shown the college was paying for a good deal of state work of a non-collegiate character out of the fertilizer tax receipts. In 1914 the state began to make appropriations for these non-collegiate activities, and that relief put off the day of asking for direct appropriations. However, the increased attendance and the increased cost of operation will make necessary from this time on a substantial annual appropriation to meet the operating costs of the college and provide for its growth.

Enrollment 1909-10 to 1923-24.

Fiscal Statement * Junly 1, 1909—June 30, 1924.

| Fiscal Year | Fertilizer Tax ** | State Appropriation or Loan | College Session | Sum. Session | Total | Grad's |
|-------------|-------------------|-----------------------------|-----------------|--------------|-------|--------|
| 1909-10 | \$226,980.96 | None | 650 | 3 | 653 | 77 |
| 10-11 | 264,374.08 | None | 683 | 20 | 703 | 87 |
| 11-12 | 221,000.00 | None | 804 | 7 | 811 | 92 |
| 12-13 | 231,500.00 | None | 819 | 15 | 834 | 74 |
| 13-14 | 276,000.00 | None | 800 | 18 | 818 | 78 |
| 14-15 | 155,859.76 | None | 819 | 0 | 819 | 107 |
| 15-16 | 171,018.52 | 62,400.00 (loan) | 802 | 148 | 950 | 118 |
| 16-17 | 237,943.93 | None | 853 | 124 | 977 | 110 |
| 17-18 | 268,721.68 | None | 804 | 0 | 804 | 113 |
| 18-19 | 258,477.10 | None | 825 | 132 | 957 | 99 |
| 19-20 | 313,472.54 | None | 886 | 128 | 1014 | 141 |
| 20-21 | 167,505.16 | 112,842.11 (loan) | 847 | 234 | 1081 | 124 |
| 21-22 | 126,118.07 | 150,000.00 " | 1007 | 39 | 1046 | 132 |
| 22-23 | 169,717.53 | 90,856.66 (Appr.) | 1008 | 478 | 1486 | 134 |
| 23-24 | 225,000.00 | 91,813.14 *** | 1050 | 535 | 1585 | 136 |

* Not including Public Service supported by special state or U. S. appropriations.

** Income from other sources now about \$75,000.00 annually.

*** For 1924 payment on loan plus \$80,495.97 additional must be added unless payment due is cancelled or deferred.

Loan of 1915-16 repaid within three years.

Figures for 1923-24 are estimates.

COLLEGE ACTIVITY.**Calendar Year 1924.****Estimated Expenditures:**

| | |
|--|--------------|
| 1. Superintendence and records ----- | \$ 29,776.18 |
| 2. Collegiate Instruction ----- | 248,407.14* |
| 3. Upkeep of Buildings and Grounds ----- | 72,793.19 |
| 4. Public Utilities ----- | 26,524.00 |
| 5. Summer School ----- | 5,000.00 |

Total Normal Budget ----- \$382,500.51

| | |
|---|------------|
| 6. Dormitory for 200 cadets ----- | 100,000.00 |
| 7. Payment on loans (if required) ----- | 80,495.97 |

Grand total ----- \$562,996.48

* Includes \$22,300.00 for scholarships.

| | |
|--|--------------------------|
| 8. Interest on Clemson Bequest ----- | \$ 3,512.36 |
| 9. Interest on Landscrip ----- | 5,754.00 |
| 10. Morrill and Nelson Funds (U. S.) ----- | 25,000.00 |
| 11. Estimated Tuition and Fees ----- | 20,000.00 |
| 12. Estimated Rents and Misc. Receipts ----- | 20,000.00 |
| | <hr/> |
| | \$74,266.36 |
| 13. Estimated Fert. Tax, 1923, \$225,000.00 | |
| Less cost of inspection ----- 36,770.00— | \$188,230.00 |
| | <hr/> |
| | \$262,496.36 |
| 14. Est'd balance, January 1, 1924 ----- | 28,191.01 |
| | <hr/> |
| | \$290,687.37 |
| 15. Necessary State Appropriations: | |
| (a) For maintenance (sal's) \$91,813.14 | |
| (b) For buildings (Dom'y) 100,000.00 | |
| (c) For payment on loans, (if | |
| required) ----- | \$80,495.97** 272,309.11 |
| | <hr/> |
| Grand Total ----- | \$ 562,996.48 |

** Represents the payment due in 1924, plus the 1923 payment deferred by Act of Legislature.

General Comments on the Budget:

The budget presented represents a normal budget as appropriated by the Board of Trustees at their meeting last June for the fiscal year 1923-24. It is not materially different in amount from the budget of 1922-23. Some confusion is necessarily caused by the fact that the calendar year 1924 represents one half of our 1923-24 budget and one half of the 1924-25 budget, which latter budget is not yet made and cannot with certainty be predicted.

The legislature is requested to authorize the expenditure of Items 1—5 inclusive, contributing an appropriation of \$91,813.14 to "Personal Service." included in Item 2, "Collegiate Instruction." It would seem unwise to cover into the Treasury our estimated receipts of \$290,687.37 and burden the budget by over a quarter of a million dollars through re-appropriating this amount. The simplest and most logical plan is to appropriate only the amount necessary to be added to the other sources of income to

maintain the work of the college at its present scope and level. No increases in salary over the 1923 schedule are included in the 1923 budget, although increases of salary may have to be made from time to time during the year.

The cost of materials for shops and laboratories, and also the cost of equipment is still at a high level, and the cost is increased in proportion to the increased attendance.

EXPLANATION OF BUDGET ITEMS.

1. Superintendence and Records—(\$29,776.18):

Under this heading are included the salaries of teachers and the cost of operating the offices of the President, the Treasurer, the Registrar and the Director of Student Affairs. Aside from salaries the largest items are for travel, including the travel of the Trustees, Boards of Visitors, Legislative Committees, etc.

The amount under this heading (1) is slightly less than the estimate for 1923, which was \$30,583.68.

Item 2. Collegiate Instruction—(\$248,407.14):

Under this heading are included salaries, insurance, supplies for shops and laboratories, educational equipment and minor structural improvements. It also includes \$22,300 for scholarships.

The scale of salaries at Clemson is very moderate. Even during the period of inflation the total increase in our salaries was only about 22%. In technical colleges such as Clemson, salaries are usually higher than in non-technical colleges because they have to compete with business corporations as well as with other colleges. In spite of that fact, the average salary at Clemson is probably lower than at any other state college for men, except the negro college at Orangeburg.

The figures below, compiled by the U. S. Bureau of Education in December 1922, show the average of 73 colleges and universities as compared with the averages at Clemson. At Clemson **no rent-free houses or other perquisites are given.** Each officer receives a cash salary and nothing more.

Salary Comparisons:

| | Deans or | | Assoc. | Asst. | |
|-------------------|-----------|---------|---------|---------|----------|
| Pres. | Director. | Profs. | Profs. | Profs. | Instr's. |
| Averages of 73 | | | | | |
| Colleges and Uni- | | | | | |
| versities \$8,482 | \$4,250 | \$3,392 | \$2,800 | \$2,300 | \$1,800 |
| Clemson | | | | | |
| Averages 6,000 | 3,650 | 2,808 | 2,288 | 2,035 | 1,625 |

The item for shop and laboratory **supplies** at a college like Clemson, where the Freshman and Sophomore classes take a good deal of shop work, is necessarily large because of the consumption of steel, iron, wood, chemicals, glass ware, etc. The college must pay these costs unless we follow the fashion of many other colleges of requiring the students to pay a shop and laboratory fee to cover them.

The item for **educational equipment** is also large in a technical college. Evidently most of the colleges classify this under operating expenses. It includes electrical instruments, microscopes, balances, pruning shares, agricultural implements, and a hundred other items necessary to give technical instruction and to keep technical laboratories up-to-date. To withhold these necessary facilities for teaching would be to betray the trust of students whose money and precious time are being devoted to the pursuit of an education.

The item for "collegiate instruction" last year, not including the \$40,249.26 payment on loans, which amount was remitted by the legislature, was \$248,497.77.

Item 3. Upkeep of Buildings and Grounds—(72,793.19):

Clemson College is a small village, consisting of twenty or more public buildings and more than sixty residences for teachers and officers. Not only must these buildings be kept in repair, but from time to time minor changes and additions are necessary due to increased demands as our attendance increases. The college property of 1,560 acres, has twenty-one miles of road and nearly five miles of concrete and dirt side walks. The upkeep of these is an item of no small expense and importance.

During the last six months of 1923 it was necessary to provide an addition to our messhall and to rebuild two of

our toilet buildings which were declared unsafe. The addition to the mess hall and in part the work of replacing the toilets was done during the spring of 1923, but part of the latter work, together with a necessary addition to our college chapel remains to be done in 1924. These additions account for the increase of item 3 over the budget figure of last year, which was \$33,021.91. The mess hall and chapel additions represent absolutely necessary expenditures to meet our increased attendance.

Item 4. Public Utilities—(\$26,524.00):

Situated as it is in the country, Clemson has to maintain such public utilities as a heat, light and water plant, pumping stations, sewer system and the usual features of law enforcement common to a small village. Our coal consumption alone amounts to nearly 3,500 tons annually, representing over \$20,000 in money. The amount budgeted in 1923 under this item was \$29,491.02.

Item 5. Summer School—(\$5,000):

From small beginnings in 1910, Clemson College has gradually built up the second largest summer school in the state. During the summer of 1923 we had an attendance upon this summer school of 591 students. In addition we had 552 club boys, county agents and Smith-Hughes teachers who were here for conferences of a few days. This great increase in attendance makes necessary a substantial increase in the summer school teaching force. The regular college facilities furnish the necessary shop, laboratory and library equipment used by the summer school students.

The amount budgeted for the summer school in 1923 was \$1,500, which left quite a deficit on the summer school operations for 1923.

Item 6. Dormitory for 200 Cadets—(\$100,000):

This is the first building at Clemson for which the legislature has been asked to appropriate money. This dormitory has been needed for several years past, but we have now come to the point where we can not longer do without it. This fall (1923) we had 602 new students to apply for admission. We actually admitted 393, or approximately two-thirds of those who applied. Not all who

were refused were prepared to enter, but the number of applicants indicates to some extent the demand for the kind of education which Clemson is giving. At the opening of this session we had to put **three men to the room in 110 rooms**, a condition unsatisfactory from the point of convenience, sanitation and of study. The additional dormitory would relieve the present congestion and give space for 90 additional students. These could be handled without any material increase in the operating costs of the college.

The college plant at Clemson is incomplete in that it lacks a library building, a gymnasium and a suitable hospital. Additions to the textile, engineering and agricultural buildings are also badly needed. These, however, we are reserving for the passage of the bond issue which will provide in a more logical way for the continued and symmetrical growth of all of our educational, charitable and penal institutions.

Item 7. Payment on Loans—(\$80,495.97):

The college borrowed in the fall of 1922, \$112,842.11 and in the fall of 1923, \$150,000.00. These amounts were borrowed from the State Treasurer and **not from the Sinking Fund Commission**. Under the terms of the borrowing act the college was to pay on each anniversary one-tenth of the principal sum with interest. In the budget of 1923 \$40,249.26 was carried to meet the 1923 payment. The legislature, however, deferred the 1923 payment instead of making the appropriation necessary. There will be due in 1924, \$80,495.90, representing the 1923 and 1924 payments, with interest.

It is requested that the legislature cancel the notes held by the Treasurer as there would be no advantage in the state's making appropriations with which to pay itself and thereby burdening the budget unnecessarily. The State Treasurer will I am sure raise no objection to the policy of cancellation.

Clemson is a state institution and whatever it lacks of support from the fertilizer tax must necessarily be provided by direct appropriation. Had the loans not been made, appropriations of equal amounts would have been necessary. There is no reasonable prospect of the fertilizer tax ever

being large enough to continue the operation of the college much less reimburse the state for the loans of 1922 and 1923. Even should the fertilizer tax grow to an amount greater than in the past the increase would be more than absorbed by the rapid growth of the institution in numbers and in activities. Both from the standpoint of equity and of business, the legislature is respectfully requested to cancel the present indebtedness of the college to the State Treasury.

PART II. APPROPRIATIONS FOR PUBLIC SERVICE.

The college is submitting **exactly the same estimate** for non-collegiate public service as was submitted in 1923. More work could be done if more money were available, but recognizing the condition of the state it has not been thought wise to suggest increases or extensions of the service for 1924. In the statement below there appears in the first column of figures the appropriations requested of the legislature. In the second column appear the funds which are received from other sources—

Cost of Public Service—1924:

| Activity | Legislative Appropriations Requested | Income from Other Sources | Total Resources |
|---|--|---------------------------------|---------------------|
| 1. Fertilizer Ins. and Anal. | | \$ 36,770.00 | \$ 36,770.00 |
| 2. S. C. Expt. Station | | 63,800.00 | 63,800.00 |
| 3. S.-L. Extension Service..... | 110,862.85 | 156,014.49 | 266,877.34 |
| 4. Agricultural Research | 50,000.00 | | 50,000.00 |
| 5. Boll Weevil Control | 25,000.00 | | 25,000.00 |
| 6. Crop Pests and Diseases | 10,000.00 | | 10,000.00 |
| 7. Live Stock Sanitary Work | 50,000.00 | | 50,000.00 |
| 8. Tick Eradication | 20,000.00 | | 20,000.00 |
| 9. Slaughtered Live Stock | 4,000.00 | | 4,000.00 |
| 10. Hog Cholera Serum | | 50,000.00 | 50,000.00 |
| Totals Budgeted | \$269,862.85 | \$306,584.49 | 576,447.34 |
| 11. Funds administered but not actually handled by C. A. C.: | | | |
| (a) No. 3, From Counties, etc. | | \$145,830.00 | \$145,830.00 |
| (b) No. 5, U. S. Dept. Agri. | | 25,000.00 | 25,000.00 |
| (c) Nos. 7 and 8, U. S. D. A. | | 30,000.00 | 30,000.00 |
| Totals Available—Public Service | \$269,862.85* | 507,414.49 | \$777,277.34 |

* Same as 1923 appropriation.

It will be noted from the table that for its appropriation of \$269,862.85 the state receives an agricultural service estimated at \$777,277.34. The lines of public service covered by the state's appropriations are so well known to the citizenship of the state and to the members of the General Assembly that little explanation should be necessary.

Items 1, 2. 10—(No Appropriation Requested):

The fertilizer inspection and analysis, \$36,770.00, is paid from the fertilizer tax receipts. The S. C. Experiment station, \$63,800.00, is paid from the Federal Hatch and Adams funds and the sale of farm products. The Hog Cholera Serum distribution, \$50,000.00, is financed from the sale of serum and biologics which are furnished to the farmers of the state at cost.

Item 3. Smith-Lever Extension Service—(\$110,862.85):

In 1914 the state of South Carolina accepted the terms of the Federal Smith-Lever Extension Act. This act provided for definite appropriations by the federal government on condition that certain moneys would be provided in the state. The annual appropriation made by the legislature reached its maximum in 1922 and the request for this year is the same as for last year and the year before. Through supplementary legislation the federal appropriations have been increased beyond the terms of the original Smith-Lever Act so that the state receives annually \$156,014.49.

The extension service is the only state-wide agricultural organization to which the state contributes, and which is maintained for the benefit of the people on the farms. It includes also the home demonstration work administered from Winthrop College, \$126,644.33 being expended in that line of service.

Item 4. Agricultural Reaserch—(\$50,000.00):

This is the same amount that has been appropriated heretofore, and represents the necessary supplementary funds to support the research work at the college, at the coast station near Summerville, and at the Pee Dee Station at Florence. This \$50,000 represents the entire amount spent by South Carolina for research work in that great

profession in which 85 percent of our people are directly concerned. A single discovery which will even slightly reduce the large fertilizer bill of the state, or save an additional boll of cotton, or check the ravages of some plant disease or insects pest, may easily be worth to the state in a single year the cost of all its research work for several decades.

The development of certain strains of wilt resistant cotton, notably the "Dixie-Triumph" is worth to the south more than the cost of the agricultural research for 100 years.

Item 5. Boll Weevil Control—(\$25,000.00):

This appropriation was made for the first time in 1923 to enable the college to accept the proposition from the Federal Department of Agriculture to establish a parent station at Florence for investigating the various methods of poisoning and other processes looking to the control of the boll weevil. The work accomplished at this station appears in a special publication issued by the college in December 1923. The importance of the results already obtained can hardly be over-estimated and the field of study is too important and too attractive to be abandoned. It is evident from the results obtained at the Florence Station that poisoning is only one method and perhaps not the most important for producing cotton under boll weevil conditions. In the right variety, proper spacing, proper fertilization, and proper cultivation is likely to be found the most significant answers as to how cotton can be produced under boll weevil conditions.

Item 6. Crop Pests and Diseases—(\$10,000.00):

For this work no increase is requested. Perhaps no single appropriation for control work is more important or productive than this. But for the vigilance of the State Entomologist and the State Pathologist and their assistants, South Carolina would soon be the dumping ground for diseased seed, plants and nursery stock and be an unprotected territory for the invasion of plant diseases and insect pests. Many serious pests and diseases are at South Carolina's door and some of them have already gained a foothold. The work of the Crop Pest Commission is the sole protec-

tion which the state has against increased loss. The U. S. Department of Agriculture in a recent publication estimated that the loss in South Carolina due to plant disease alone amounted to more than twenty million dollars annually.

Item 7. Live Stock Sanitary Work—(\$50,000.00):

No increase in this appropriation over former years is asked, although double the amount could be well spent in the protection and promotion of an industry which represents in money more than the cotton crop of the state. The Live Stock Sanitary Board, which is in charge of the live stock sanitary work, is to live stock what the State Board of Health is to humans. Protection against the importation of diseased live stock, the control of contagious outbreaks such as hog cholera, anthracnose, blackleg, etc., and the testing of dairy cows for tuberculosis, are a few of the activities of our sanitary office located at Columbia. With the necessity under boll weevil conditions of turning to a more diversified agriculture, the amount and value of live stock has steadily increased. This is testified to by the excellent live stock exhibits at the last State Fair. As the industry increases the demand for veterinary service also increases. The appropriation requested represents less than one-tenth of one percent of the value of the live stock in South Carolina expended for its protection.

Item 8. Tick Eradication—(\$20,000.00):

The amount for tick eradication likewise remains unchanged. But for the free range conditions in certain counties and the lack of cooperation in certain parts of other counties, tick eradication work in South Carolina would now be completed. It is to be hoped that no further exemptions will be granted under the live stock law of the state. Such exemptions not only hinder the work in the territories concerned, but are taken as an example by those other sections who do not want to obey the law.

During the past year the Federal Department of Agriculture has been most liberal towards the tick eradication work in South Carolina, donating up to October 31st, \$41,754.41, more than twice as much as the state appropriates.

Item 9. Slaughter of Diseased Live Stock—(\$4,000.00):

This appropriation is for the purpose of reimbursing live stock owners for animals already destroyed by the state veterinarians in the control of contagious diseases.

In General:

In presenting these appropriations, the college does not come as a suppliant begging that they be made. The college regards itself rather as an **agent** of the legislature to carry out willingly and efficiently whatever lines of public service the legislature endorses and to whatever extent it is willing to support them. The duty of the college is to recommend what is needed. It is for the legislature to say how much of the service indicated should be done. The college does not feel that less should be appropriated than the amounts indicated unless the work is to be reduced in volume and in value to the agricultural people of the state.

Respectfully submitted,

W. M. RIGGS,

President, The Clemson Agricultural College.
of South Carolina.

The following reports are included in the full report:

| | |
|--|-----|
| 1. The Treasurer ----- | 65 |
| 2. The Board of Visitors ----- | 89 |
| 3. The Director of Extension ----- | 92 |
| 4. The Director of Experiment Station ----- | 119 |
| 5. The Secretary of the Fertilizer Board ----- | 146 |
| 6. The Chief Chemist ----- | 148 |
| 7. The State Entomologist and State Pathologist -- | 165 |
| 8. The State Veterinarian ----- | 178 |
| 9. The Auditor ----- | 186 |

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLLARSHIPS.**Abbeville County**

Pay Tuition—

Acker, T. F., Abbeville.
Anderson, W. L., Antreville.
Coleman, J. F., Abbeville.
Graves, Paul, Abbeville.
Moore, W. H., Abbeville.
Prince, J. E., Abbeville.
Roche, T. G., Abbeville.

Free Tuition—

Cheatham, J. C., Abbeville.
Hagen, Chas. M., Due West.
Reames, T. J., Abbeville.
Roche, O. A., Abbeville.

Scholarship—

Klugh, John B., Abbeville.
Tate, H. S., Abbeville.

Aiken County

Pay Tuition—

Dyches, H. M., Aiken.
Sally, H. D., Sally.
Sally, L. J., Sally.
Sawyer, G. W., Monetta.
Simkins, L. H., Augusta, Ga.

R. F. D.

Sudlow, W. H., Aiken.
Wyman, H. V., Aiken.

Free Tuition—

Burton, R. H., Warrensville.
Byrd, D. A., Graniteville.
Floyd, A. R., Augusta., R. F. D.
Garvin, B. W., Severin.
Garvin, C. W., Severin.
Howard, H. H., Graniteville.
Shealy, A. N., Perry.
Woodward, T. E. P., Aiken.
Woodward, Wade, North

Augusta

Scholarship—

Jeffcoats, U. R. B., Jr., Taylors-
ville.

Allendale County

Pay Tuition—

Guess, J. P., Appleton.
Henry, S. W., Jr., Allendale.
Loadhalt, N. B., Fairfax.
Youmans, L. W., Fairfax.

Free Tuition—

Keel, J. H., Allendale.
Stoney, P. D., Allendale.

Scholarship—

Ellis, L. D., Martin.
Tison, P. H., Allendale.
Youmans, M., Fairfax.

Anderson County

Pay Tuition—

Ashley, A. R., Honea Path.
Chandler, J. C., Anderson.
Chapman, W. E., Pendleton.
Corn, Horace, Anderson.
Cox, F. M., Jr., Belton.
Dacus, J. A., Williamston.
Dalrymple, L. P., Pendleton.
Dean, F. F., Anderson.
Griffin, J. K., Belton.
Guyton, J. T. C., Williamston.
Hanks, S. H., Iva.
Jones, J. F., Starr.
Jones, P. C., Starr.
Keasler, G. S., Pendleton.
Lyon, J. J., Anderson.
McGee, E. T., Starr.
McGill, C. A., Anderson.
McLees, F. C., Townville.
Norris, J. A., Piedmont.
Pearman, S. N., Starr.
Pepper, W. C., Anderson.
Prevost, T. H., Anderson.
Pruitt, A., Anderson.
Pruitt, B. A., Anderson.
Pruitt, J. M., Anderson.
Pruitt, R. S., Anderson.
Sligh, W. D., Anderson.
Smith, B. M., Starr.
Smith, O. N., Anderson.
Stevenson, N. W., Anderson.
Strickland, Paul, Belton.
Strickland, P. E., Belton.
Tate, R. H., Anderson.
Todd, J. A., Starr.
Webb, J. H., Anderson.
Wilson, G. C., Honea Path.

Free Tuition—

Aiken, Chas. C., Anderson.
Bigby, L. S., Williamston.
Brown, W. F., Anderson.
Burris, A., Anderson.
Crenshaw, J. C., Williamston.
Darby, J. M., Sandy Springs.
Davenport, O. F., Belton.
Day, E. S., Pendleton.
Duckworth, B. F., Anderson.
Dunlap, J. M., Honea Path.
Erschine, J. H., Anderson.
Gambrell, F. L., Pendleton.
Garrison, N. A., Sandy Springs.
Gerrard, F., Anderson.
Gilmer, F. S., Anderson.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Griffin, R. L., Anderson.
 Hall, F. B., Iva.
 Hankins, C. E., Starr.
 Heller, W. F., Sandy Springs.
 Heywood, Geo. C., Pelzer.
 Hodge, B. H., Starr.
 Jackson, R. A., Starr.
 Jackson, S. L., Starr.
 Lander, A. M., Pelzer.
 Littlejohn, C. M., Belton.
 McClellan, G. W., Anderson.
 McCown, W. H., Anderson.
 McGee, J. A., Starr.
 Marshall, J. C., Anderson.
 Murphy, T. J., Piedmont.
 Patterson, S. N., Williamston.
 Russell, B. A., Auten.
 Smith, E. T., Anderson.
 Speer, G. M., Anderson.
 Eteele, W. P., Anderson.
 Stuart, E. C., Anderson.
 Sullivan, V. D., Anderson.
 Tripp, W. W., Anderson.
 Turner, G. E., Anderson.
 Welborn, W. H., Pendleton.
 Wigginton, J. T., Anderson.

Scholarship—

Babb, J., Pelzer.
 Bagwell, J. C., Anderson.
 Burris, W. F., Anderson.
 Farmer, W. A., Anderson.
 Garvin, P. M., Pendleton.
 McAllister, L. C., Pendleton.
 Shanklin, J. A., Pendleton.
 Smith, E. L., Anderson.
 Smith, G. A., Anderson.

Bamberg County

Pay Tuition—

Mayfield, J. T., Denmark.

Free Tuition—

Hutto, D. F., Denmark.
 Price, G. E., Bamberg.
 Sojourner, J. H., Denmark.
 Zeigler, F. M., Denmark.
 Zeigler, R. L., Denmark.

Scholarship—

Price, L. C., Bamberg.

Barnwell County

Pay Tuition—

Willis, M. A., Williston.

Free Tuition—

Dyches, L. B., Barnwell.
 Hair, D. H., Blackville.
 Ray, W. S., Blackville.

Scholarship—

McKerley, J. B., Elko.
 Walker, J. E., Blackville.

Beaufort County

Pay Tuition—

Peeples, P., Bluffton.
 Ricker, E. C., Beaufort.
 Weatherston, J. C., Bluffton.

Free Tuition—

Evans, J. K., Beaufort.
 Sanders, E., Jr., Pritchardville.

Scholarship—

Berkley County

Pay Tuition—

Free Tuition—

Harvey, O. J., Summerville.
 Rudloff, J. H., Pinopolis.

Scholarship—

Linder, E. O., Mount Holly.
 Smith, J. E., Ridgeville.

Calhoun County

Pay Tuition—

Banks, R. W., St. Matthews.
 Buyck, W. P., St. Matthews.
 Cox, H. A., St. Matthews.
 Edwards, R. M., Elloree.
 Hane, J. K., Fort Mill.
 Jordan, W. E., St. Matthews.
 Stoudemire, L. C., Lone Starr.

Free Tuition—

Cauthen, W. H., Fort Motte.
 Crook, A. L., Cameron.
 Hane, W. W., St. Matthews.
 Keller, W. A., St. Matthews.
 Pauling, J. R., Jr., St. Matthews.
 Tabor, W. P., Fort Motte.

Scholarship—

Herlong, E. S., St. Matthews.
 McGown, W. D., Cameron.

Charleston County

Pay Tuition—

Bee, S. S., James Island.
 Cappleman, G. J. S., Charleston.
 Darby, C. P., Mt. Pleasant.
 Ferguson, J. L., Charleston.
 Grice, Geo. D., Charleston.
 Haymaker, W. E., Charleston.
 LaRoche, J. D., Edisto Island.
 Livingston, D. F., Charleston.
 Mikel, S. H., Edisto Island.
 Prouse, O. B., Charleston.
 Smith, J. P., Charleston.
 Stello, L. T., Charleston.
 Stevens, J. T., Charleston.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Stringfellow, W. K., Charleston.
 Welling, C. E., Jr., Charleston.
 Weiters, H. C., Charleston

Free Tuition—

Bunch, R. L., Charleston.
 Davis, R., Martins Point.
 Dotterer, E. G., Charleston.
 Kirkland, C. L., Jr., McClellan
 Klenke, John, Charleston.
 Mazzack, J. F., Charleston.
 Reid, D. A., Charleston.
 Silcox, D. H., Mt. Pleasant
 Stevenson, C. A., Charleston.
 Townsend, T. S., Martins Point.

Scholarship—

Beckman, C. R., McClellanville.
 Pinckney, A. G., Charleston.

Cherokee County

Pay Tuition—

Fortenberry, R. O., Gaffney.
 Hall, J. H., Gaffney.
 Hall, R. E., Gaffney.
 Hambright, W. A., Kings Creek
 Hoyle, Claud, Blacksburg.
 Jeffries, T. L., Gaffney.
 McCraw, F. Z., Gaffney.
 Smith, R. E., Blacksburg.
 Woodside, H. R., Gaffney.

Free Tuition—

Betsill, J. L., Gaffney.
 Brown, J. J., Gaffney.
 Gaffney, H. E., Gaffney.
 Haas, T. B., Gaffney.
 Inman, A. K., Wilkinsville.
 McCraw, L. G., Gaffney.
 Quinn, J. R., Gaffney.

Scholarship—

Mullins, H. D., Gaffney.
 Tollison, L. C., Gaffney.

Chester County

Pay Tuition—

Causley, Jack E., Chester.
 Hall, E. H., Jr., Great Falls.
 Harden, J. C., Chester.
 Harden, J. H., Lowryville.
 Harden, H. M., Lowryville.
 Jordan, R. C., Bascomville.
 Reid, W. J., Richburg.
 Reid, J. R., Richburg.
 Shannon, J. R., Blackstock.
 Tibbs, R. H., Grati Falls.
 White, J. A., Chester.
 Wooten, R. B., Lewis Turnout,
 Route 1.

Free Tuition—

Bankhead, J. M., Lowryville.
 Bankhead, W. W., Lowryville.
 Bell, S. L., Chester.
 Darby, J. E., Chester.
 Ford, R. F., Richburg.
 Gaston, J. P., Rodman.
 Hall, J. W., Chester.
 Hollis, P. T., Rodman.
 McKeown, S. M., Cornwell.
 Melton, L. H., Chester.
 Murr, B. L., Chester.
 Reid, T. B., Richburg.
 Sanders, J. H., Chester.
 Sanders, J. R., Chester.
 Simpson, M. B., Edgemoor.
 Simpson, W. N., Richburg.
 Wade, G. L., Chester.
 Wade, W. M., Lowryville.

Scholarship—

Bramlett, J. W., Leeds.
 Stevenson, R. A., Richburg.
 Stevenson, T. C., Richburg.
 White, W. A., Chester.

Chesterfield County

Pay Tuition—

Knight, J. E., Cheraw.
 Knight, T. M., Cheraw.
 Odom, W. H., Chesterfield.

Free Tuition—

Blakney, L. R., Pageland.
 Knight, H. D., Angelus.

Scholarship—

Powell, G. H., Jr., Cheraw.
 Thrower, J. H., Cheraw

Clarendon County

Pay Tuition—

Bradley, W. W., Manning.
 McIntosh, C. H., New Zion.

Free Tuition—

Hodge, J. E., Manning.
 Wilson, H. D., Manning.

Scholarship—

Plowden, E. D., Jordan.
 Timmons, J. H., Manning.
 Wilson, C. J., Manning.

Colleton County

Pay Tuition—

Boynton, C. W., White Hall

Free Tuition—

Kinard, J. A., Ruffin.
 Smyly, J. W., Ruffin.
 Thomas, J. H., Ruffin.
 Willis, W. H., Cottageville.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Scholarship—

Hiers, F. N., Ashton.
Padgett, A. B., Smoaks.
Sanders, K. B., Waterboro.
Smith, R. H., Smoaks
Smyly, M. M., Ruffin.

Darlington County

Pay Tuition—

Anderson, E. C., Timmons ville.
Anderson, O. S., Timmons ville.
Condor, H. W., Darlington.
Jeffords, A. U., Lamar.
Stokes, K. E., Darlington.

Free Tuition—

Boseman, T. R., Darlington.
Bryant, W. D., Dovesville
Calhoun, C. F., Darlington.
Foster, R. M., Hartsville.
Hawkins, L. B., Darlington.
Jeffords, C. H., Darlington.
Lewis, J. M., Darlington.
Lewis, W. M., Darlington.
Rhodes, C. F., Darlington.
Rhodes, N. C., Darlington
Rhodes, W. A., Darlington.
Stokes, T. L., Timmons ville.
Stuckey, C. C., McBee.

Scholarship—

Flowers, H. B., Darlington.
Howle, J. P., Hartsville.
Jordan, E. H., Timmons ville.
Ross, J. E., Society Hill.

Dillon County

Pay Tuition—

Hargrove, F. W., Dillon
LeGette, J. S., Latta.
McCormack, E. A., Dillon.
McCormack, E. L., Dillon.
McCormack, J. H., Dillon.
Williamson, J. W., Hamer.

Free Tuition—

Alford, E. R., Latta.
Hamilton, S. S., Dillon.
LeGette, M. A., Latta

Scholarship—

Allen, A. G., Dillon.
Hayes, T. W., Latta.
Johnson, R. A., Dillon.
McLeod, N. A., Bingham
McLeod, T. E., Bingham.
Van de Erve, J. M., Summerville

Dorchester County

Free Tuition—

Allen, A. N., Summerville.

Scholarship—

Kizer, H. F., St. George.

Edgefield County

Pay Tuition—

Day, C. B., Trenton.
Jamison, T. R., Trenton.
Sawyer, W. L., Johnson.
Thurmond, J. S., Edgefield.
Watson, S. J., Johnson.

Faillfield County

Pay Tuition—

Blair, J. W., Blairs.
Curlee, J. R., Winnsboro.
Jones, M. L., Longtown.
McMeeken, F. R., Monticello.
McMeekin, S. C., Jenkins ville.
Robinson, C. A., Winnsboro.
Turner, J. B., Winnsboro.

Free Tuition—

Burley, F. A., Monticell.
Cathcart, A. B., Winnsboro.
Chappell, I. W., Fairfield.
Elliot, W. R., Winnsboro.
Glenn, H. Y., Wallaceville.
Jennings, F. C., Winnsboro.
Tennant, A. B., Winnsboro.
Wright, J. B., Shelton.

Scholarship—

Hair, S. A., Woodward.

Florence County

Pay Tuition—

Bryce, G. W., Florence.
Coleman, A. A., Hyman.
Evans, M. A., Pamplico.
Huggins, M. B., Timmons ville.
Smith, E. D., Florence.
Whitlock, I. M., Lake City.

Free Tuition—

Benton, L. L., Timmons ville.
Bulken, J. G., Florence.
Finklea, G. I., Florence.
Hawkins, G. E., Timmons ville.
Henson, H. L., Scranton.
Jeffords, G. P., Timmons ville.
Matthews, S. C., Scranton.
Moore, P. W., Florence.
Whitton, J. E., Florence.

Scholarship—

Hinson, I. L., Scranton.
Jackson, T. G., Florence.
Law, J. M., Scranton.
Shands, R. G., Ebernezer.
Shands, W. A., Ebernezer.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Greenwood County

Pay Tuition—

Allen, C. S., Greenwood.
 Jackson, M. E., Greenwood.
 Rhodes, S. B., Gaines.
 Rogers, H. W., Gallison.
 Rogers, S. A., Gallison.
 Seago, J. A., Greenwood.
 Sneed, C. B., Greenwood.
 Tinsley, H. K., Hodges.
 Williams, B. L., Gaines.
 Williamson, J. H., Dyson.

Free Tuition—

Bell, R. F., Callison.
 Bowls, H. J., Greenwood.
 Cochran, G. B., Donalds.
 Cothran, G. T., Greenwood.
 Rasor, A. B., Dolands.
 Warner, M. R., Greenwood.

Scholarship—

Brissie, M. B., Hodges.
 Martin, F. G., Ninety Six.
 Shirley, L. R., Greenwood.
 Woodle, H. A., Greenwood.

Greenville County

Balentine, W. L., Greenville.
 Batson, J. P., Greenville.
 Beam, Fred A., Pelzer.
 Bryan, G. T., Greenville.
 Croskeys, H. G., Piedmont.
 Cunningham, J. L., Greer.
 Curdts, E. C., Jr., Greenville.
 Davis, E. P., Greenville.
 Dillard, W. P., Greer.
 Fayssox, F. S., Greenville.
 Hendrix, J. H., Connestie.
 Henderson, H. J., Greer.
 Jacobi, L. W., Greenville.
 Jones, W. L., Greer.
 LaBoone, F. P., Taylors.
 Leach, M. R., Greenville.
 Marler, J. A., Fountain Inn.
 Marshall, D. H., Greenville.
 Morgan, B. A., Greenville.
 Rice, J. T., Pelzer.
 Thornton, Gregory, Greenville.
 Verdery, C. B., Greenville.
 Williams, W. B., Greenville.

Free Tuition—

Ballenger, W. M., Greer.
 Chapman, A. H., Greenville.
 Cureton, R. H., Greenville.
 Du Vernt., W. R., Greenville.
 Green, G. H., Greer.
 Hargrove, J. C., Greenville.

Holohan, R. F., River Falls.
 Holohan, V. J., River Falls.
 Patrick, B. C., Greenville.
 Reese, M. R., Greer.
 Smith, J. R., Greenville.
 Taylor, F. W., Fountain Inn.

Scholarship—

Burgess, J. A., Greer.
 Crain, M. C., Taylor.
 McCrary, A. L., Greenville.
 Miller, C. L., Greenville.
 Pope, T. H., Greenville.

Georgetown County

Pay Tuition—

Jones, D. B., Georgetown.
 Westbury, J. E., Georgetown.

Free Tuition—

Scholarship—

Doar, L. H., Georgetown.

Horry County

Pay Tuition—

Burroughs, C. H., Conway.
 Harrellson, O. M., Loris.
 King, C. B., Myrtle Beach.

Free Tuition—

Lewis, J. G., 1st, Aynor.

Scholarship—

Causey, L. G., Tabor, N. C.,
 R. F. D., 2
 Dorman, J. K., Conway.
 Long, C. A., Conway.
 Williamson, J. G., Tabor, N. C.,
 R. F. D., 2

Hampton County

Pay Tuition—

Causey, W. B., Hampton.
 Gooding, P. H., Hampton.
 Hoover, G. B., Hampton.
 Kearse, F. G., Crocketsville.
 Lawton, B. M., Lena.
 Manor, J. K., Garnett.

Free Tuition—

Long, G. B., Garnett.
 Lightsey, L. M., Hampton.
 Mason, W. A., Estill.
 Wiggins, E. C., Garnett.
 Wiggins, J. E., Garnett.

Scholarship—

Bowers, H. A., Hampton.

Jasper County

Pay Tuition—

Free Tuition—

Scholarship—

Wilson, F. E., Ridgeland.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Kershaw County

Pay Tuition—

Burnett, A. W., Camden.
De Loache, E. C., Camden.
De Loache, L. D., Camden.
Jones, E. L., Liberty Hill.
Lenior, T. W., Camden.
Porter, H. S., Camden

Free Tuition—

Hinson, E. M., Blaney.
Kirkland, C. R., Camden.
Kirkland, R. R., Camden.

Scholarship—

Clark, T. H., Camden
Goodale, T. E., Camden.
Richards, J. P., Liberty Hill.

Lancaster County

Pay Tuition—

Bailes, W. B., Fort Mill.
Bailey, T. L. W., Jr., Clinton.
Stewman, W. S., Lancaster.
Williams, E. B., Kershaw.

Free Tuition—

Cook, W. C., Kershaw.
Timmons, E. D., Lancaster
Timmons, L. C., Lancaster.

Scholarship—

Alexander, E. R., Fort Mill.
Blakney, L. B., Lancaster.
Faile, N. F., Lancaster
Outen, D. L., Kershaw.

Laurens County

Pay Tuition—

Carter, D. E., Clinton.
Clapp, W. J., Clinton.
Copeland, E. W., Laurens
Easterby, A. H., Laurens.
Hunter, H. A., Clinton.

Nance, C. D., Cross Hill.

Rhame, D. O., Clinton
Roper, C. H., Laurens.
Taylor, W. H., Laurens.
Wallace, T. P., Bryson.

Free Tuition—

Albright, W. V., Laurens
Boyd, J. A., Laurens.
Counts, R. H., Laurens.
Davis, T. W., 1st., Clinton.
Dial, W. A., Cross Hill.
Dunlap, W. L., Laurens.
Fleming, J. M., Lanford Station.
Garrett, C. C., Laurens.
Griffin, W. F., Cross Hill.
Holmes, R. A., Laurens.
Knight, A. J., Ware Shoals.

Steer, R. D., Clinton.

Wood, A. K., Ware Shoals.

Scholarship—

Armstrong, A. V., Owings.
Holmes, J. S., Mountville.
Wofford, G. C., Laurens.

Lee County

Pay Tuition—

Clark, T. B., Lynchburg.
Crossnell, Hal, Bishopville.
Davis, T. W., 2nd., Bishopville.
McLendon, J. R., Bishopville.

Free Tuition—

Bateman, E. D., St. Charles.

Scholarship—

Hinson, H. S., Lynchburg.
Lemon, J. M., Orangeburg.

Lexington County

Pay Tuition—

Barr, C. M., Leesville
Franklow, M. L., Leesville.
King, D. B., Swanson.
Rutland, M. H., Batesburg.
Smith, B. P., Batesburg
Wise, P. N., Batesburg.

Pay Tuition—

Hartley, R. L., Batesburg.
Hillier, R. E., Chapin.
Watson, T. C., Batesburg

Scholarship—

Culler, F. N., Swanson.
Hendrix, S. H., Lexington.

Marion County

Pay Tuition—

Crayen, W. H., Cresham.
Edwards, A. W., Mullins
Mace, J. C., Marion.
Rogers, C. H., Mullins.

Free Tuition—

Barham, J. R., Marion.
Cartwright, A. K., Marion
Driggers, B. F., Sellars.
McMillan, R. W., Centenary.
Mace, A. P., Mullins.
Mace, K. M., Mullins
Owens, J. B., Marion.

Scholarship—

Davis, O. W., Centenary.
Evans, F. A., Marion.
Jones, G. L., Mullins

Marlboro County

Crossland, J. E., Bennettsville.
Fletcher, E. G., McColl.
Fletcher, H. W., McColl.
Napier, C. D., Blenkiem

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Rogers, J. B., Blenkiem.
 Smith, A. L., Bennettsville.
 Townsend, B. D., Bennettsville.
 Welch, W. F., Clio
 Wright, L. C., Clio.

Free Tuition—

Corry, J. S., Bennettsville.
 Easterling, K. S., Bennettsville.
 Evans, R. W., Bennettsville
 Wilkens, W. M., Clio.
 Wright, J. D., Clio.

Scholarship—

Fletcher, L. A., Bennettsville.
 Lee, R. H., Clio
 Smith, H. F., Clio.
 Smith, M. M., Clio.

McCormick County

Pay Tuition—

Covin, W. F., Willington.
 Hines, L. H., Meriwether.

Free Tuition—

Sheppard, J. L., McCormick.
 Tolbert, J. B., McCormick.

Scholarship—

Adams, L. C., Meriwether.

Newberry County

Pay Tuition—

Coleman, H. V., Silverstreet
 Coleman, J. M., Silverstreet.
 Huffman W. C., Little Mountain
 Johnson, B. F., Kinards.
 Nichols, P. M., Silverstreet
 Sanders, V. C., Newberry.
 Singley, H. S., Prosperity.
 Smith, W. B., Kinards.
 Werts, R. B., Newberry.

Free Tuition—

Boozer, L., Prosperity.
 Miller, J. H., Little Mountain.
 Pugh, R. W., Prosperity.
 Sease, E. C., Prosperity.
 Sease, R. E., Prosperity.
 Shealy, N. P., Newberry.
 Spearman, W. W., Newberry.
 Wise, G. C., Prosperity.

Scholarship—

Aull, J. C., Pomaria.
 Goree, I. M., Newberry.
 Hunter, J. H., Prosperity.
 Kibbler, J. W., Pomaria.
 Long, L. S., Prosperity.
 Smith, D. E., Kinards.

Oconee County

Pay Tuition—

Alexander, J. H., Walhalla.

Anderson, W. T., Seneca.
 Brown, C. A., West Union.
 Bryan, W. W., Clemson College.
 Carey, F. L., Seneca.
 Ellison, C. H., Seneca.
 Gignilliat, G. W., Seneca.
 Heller, J. R., Seneca.
 Hines, E. A., Jr., Seneca.
 Holmes, A. G., Clemson College
 Hunt, Frank M., Walhalla.
 McMahan, J. D., Richland.
 Martin, B. V., Clemson College.
 Martin, R. S., Clemson College
 Mills, W. H., Clemson College.
 Newman, C. C., Clemson College
 Norton, J. J., Seneca.
 Seaborn, Geo. Jr., Walhalla
 Stribling, R. W., Richland.
 Strother, F. V., Walhalla.
 Thompson, J. M., Westminster.
 Verner, J. V., Richland.
 Wetz, J. B., Clemson College.

Free Tuition—

Brown, H. A., Westminster.
 Coarsey R. W., Clemson College
 Cox, S. M., Seneca.
 Davis, C. R., Westminster.
 Freeman, M. F., Westminster.
 Gillespie, B. B., Seneca.
 Hunter, S. C., Westminster.
 McCarley, C. R., Seneca.
 Martin, L. I., Westminster.
 Mathews, D. T., Pickens.
 Shockley, J. A., West Union.
 Spencer, Bert, Westminster.
 Stribling, R. S., Seneca.
 Todd, J. N., Walhalla
 Wooten, W. H., Fair Play.

Scholarship—

McPhail, M., Townville.
 Morris, J. A., Newry.
 Shiver, J. C., Clemson College.
 Wilbanks B. H., Clemson College

Orangeburg County

Brennecke, T. H., Norway.
 Buie, J. A., Branchville.
 Culler, C. W., Orangeburg.
 Dukes, W. A., Branchville.
 Gramlin, L. E., Orangeburg.
 Herbert, D. O., Orangeburg.
 Jeffries, William, Holly Hill.
 Kirk, R. S., Jr., Eutawville.
 Knott, W. T., North.
 Lee, S. A., Orangeburg.
 Miley, J. N., Branchville.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Porter, L. A., Springfield.
 Simmons K. B., Rowesville.
 Smith, A. Z., Bowman.
 Thackston, A. J., Orangeburg.
 Till, N. R., Orangeburg.
 Weeks, J. L., Orangeburg.
 Weks, T. H., Elloree.
 Whetsill, J. A., Parlor.
 Whetsill, M. H., Bowman.
 Whittaker, M. D., Orangeburg.
 Wilson, H. F., Bowman.

Free Tuition—

Ayers, D. C., Orangeburg.
 Byrd, H. L., North.
 Fulmer, C. E., Norway.
 Howell, F. E., Orangeburg.
 Koopman, J. J., Eutawvills.
 Mosley, J. W., Orangeburg.
 O'Cain, H. F., Orangeburg.
 Rutland, J. O., Neeses.
 Savage, E. B., Orangeburg.
 Smith, T. S., Springfield.
Thompson, E. A., Reevesville
 Traxler, W. C., Bowman.
 Vincent, C. E., Orangeburg.
 Zeigler, H. J., Orangeburg.

Scholarship—

Culler, J. H., Orangeburg
 Culler, R. L., Orangeburg.
 Hart, T. J., Vance.
 Shuller, J. A., Bowman.
 Traxler, H. C., Bowman

Pickens County

Pay Tuition—

Callahan, R. J., Liberty.
 Cartee, Eugene, F., Liberty.
 Goode, C. W., Clemson College.
 Hendrix, L. A., Easley.
 Jones, B. K., Easley.
 Klugh, W. W., Clemson College.
 Linton, L. R., Clemson College.
 Linton, W. T., Clemson College.
 McHugh, J. B., Clemson College.
 McHugh, R. S., Clemson College.
 Pepper, J. O., Easley.
 Robertson, B. F., Clemson College.
 Rowland, J. H., Central.
 Smith, T. W., Pickens.
 Walker, H. P., Easley

Free Tuition—

Chambers J. A. Clemson College
 Cobb, C. N., Easley.
 Ellison, M. C., Easley.
 Hester, J. B., Easley.

Hewer, J. C., Clemson College.
 Merck, W. L., Clemson College.
 Meredith, P. F., Central.
 Palmer, E. D., Central.
 Roark, D., Pickens.
 Roark, R. B., Pickens.
 Sword, P. E., Central.
 Thomas, D. L., Liberty.
 Werner, W. J., Central.

Scholarship—

Arnold, L. W., Central.

Richland County

Pay Tuition—

Asbill, C. M., Columbia.
 Cobb, W. H., Columbia.
 Darby, J. P., Columbia.
 Ellis, E. W., Columbia.
 Harmon, S. E., Columbia.
 Roy, W. R., Columbia.
 Sams, J. H., Columbia.
 Smith, C. H., Columbia.

Free Tuition—

Bauer, E., Columbia.
 Bauer, J. W., Columbia.
 Bradley, T. L., Columbia.
 Brown, B. S., Blythewood.
 Cannon E. A., Blythewood.
 Caughman, J. B., Columbia.
 Dominick, H. B., Columbia.
 Guy, B. B., Columbia.
 Killian, J. M., Columbia.
 Lightsey, F. B., Columbia.
 Lucius, T. L., Eastover.
 Maxwell, R. E., Columbia.
 Phipps, F. V., Columbia.
 Shelamers A. M., Columbia.
 Schoolbred, A., Columbia.
 Vice, E. E., Columbia.
 Webb, H. B., Columbia.

Scholarship—

Coleman, H. C., Hopkins.
 Hoffman, M. B., Blythewood.
 McCracken, H. E., Columbia.
 Williams, M. S., Columbia.

Saluda County

Pay Tuition—

Bouknight, L. S., Batesburg.
 Watson, A. H., Batesburg.

Free Tuition—

Carson, W. O., Saluda.
 Goff, W. E., Saluda.

Scholarship—

Black, Malcombe, Prosperity.
 Watson, J. R., Batesburg.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Sumter County

Pay Tuition—

Chandler, J. W., Sumter.
Friar, E. M., Sumter.
Robinson, A. C., Oswego.
Sanders, C. W., Hagood.
Sanders, D. M., Hagood.
Tozier, L. R., Sumter.

Free Tuition—

Bass, F. J., Florence.
Bradley, N. M., Sumter.
Brunson, F. A., Sumter.
Buck, F. E., Sumter.
Davis, J. A., Sumter.
Emanuel, E. H., Borden.
Felder, J. C., Sumter.
Haynesworth, J. R., Sumter.
Kirven, W. C., Sumter.
McGrew, C. J., Sumter.
Ryan, F. R., Wedgefield.
Ryan, M. S., Sumter.
Whilden, C. N., Sumter.

Scholarship—

Haynesworth, C. R., Sumter.
Kennedy, E. C., Sumter.
Parker, A. W., Dalzell.
Thomas, H. L., Mayesville.
Wells, S. F., Sumter.

Spartanburg County

Pay Tuition—

Carson, J. W., Spartanburg.
Clemment, B. L., Spartanburg.
Cox, G. W., Greer.
Cudd, F. B., Chesnee.
Fitzgerald, A. B., Spartanburg.
Foster, H. M., Roebuck.
Gray, W. H., Woodruff.
Hagood, J. F., Spartanburg.
Johnson, W. P., Inman.
Lambright, F. L., Landrum.
Macomson, E. O., Saxon Mills.
Matthews, J. R., Spartanburg.
Patterson, J. T., Woodruff.
Phifer, M. A., Jr., Spartanburg.
Sams, M. W., Spartanburg.
Stewart, J. D., Woodruff.
Taylor, T. J., Spartanburg.
Thorne, T. F., Landrum.
Turbyfill, W. G., Spartanburg.
Watkins, E. F., Spartanburg.
Wilkins, B. E., Mayo.

Free Tuition—

Bonner, T. A., Trough.
Fuller, R. C., Pacolet.
Hendricks, T. G., Duncan.

Lee, R. L., Landrum.

McClimon, M. L., Greer.

Pearson, A. S., Spartanburg.

Shands, E. H., Campobello.

Trimmier, L. G., Spartanburg.

Turnipseed, B. R. Jr., Spartan-
burg

Vaughan, T. L., Cowpens.

West, Walter, Spartanburg.

Williams, J. D., Cherokee
Springs.

Scholarship—

Carver, J. L., Fair Forest.
Ezell, B. D., Spartanburg.
Phifer, G. E., Spartanburg.
Trent, R. L., Clifton.

Union County

Pay Tuition—

Berry, R. R., Union.
Bradley, D. W., Union.
Calvert, J. P., Jonesville.
Garner, F. H., Jr., Union.
Haas, W. V., Union.
Jeter, C. A., Carlisle.
Jordan, A. F., Union.
Littlejohn, B. C., Jonesville.
Wagnon, L. L., Union.

Free Tuition—

Burton, C. C., Union.
Cudd, J. E., Jonesville.
Hallman, A. L., Lockhart.
Hollingsworth, P. H., Union.
Howell, R. E., Buffalo.
Humphries, C. G., Union.
Jeffries, E. E., Union.
Kirby, C. E., Union.
Rice, S. C., Union.
Sartor, C. C., Union.
Smith, W. R., Union.
Whitehead, R. L., Jonesville.

Scholarship—

Clarke, D. C., Jr., Union.
Douglas, W. J., Jonesville.
Henery, W. T., Sedalia.

Williamsburg County

Pay Tuition—

Davis, I. E., Salters Depot.
O'Bryan, E. C., Heineman.
O'Bryan, M. B., Heineman.
Oliver, M. B., Greeleyville.
Register, F. B., Greeleyville.
Rhem, C. F., Rhems.

Free Tuition—

Kirton, M. B., Cades.
Steele, H., Kingstree.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

York County

Pay Tuition—

Dorsett, R., York.
 Dulin, P. M., Bowling Green.
 Faris, C. D., Rock Hill.
 Plexico, J. F., York.
 Roddy, J. D., Rock Hill.
 Watkins, C. E., Rock Hill.
 Wray, A. F., York.
 Wray, J. Q., York.

Free Tuition—

Chappell, E. D., Rock Hill.
 Ervin, R. M., Fort Mill.
 Farris, T. M., Fort Mill.
 Fewell, J. A., Rock Hill.
 Fudge, B. R., Rock Hill.
 Garrison, C. C., Fort Mill.

Gordon, W. C., Rock Hill.
 Hope, R. H., Rock Hill.
 Logan, F. R., Sharon.
 Long, E. M., Rock Hill.
 Miller, J. R., York.
 Nichols, J. L., Rock Hill.
 Plexico, P. G., York.
 Ragin, J. J., Rock Hill.
 Sharpe, J. M., Leslie.
 Young, L. R., Rock Hill.
 Youngblood, J. M., Rock Hill.

Scholarship—

Cook, J. M., Fort Mill.
 Grier, W. H., Fort Mill.
 Horton, L. F., Sharon.
 Smith, B. R. York.

Non-Resident Students.

Non-Residents

Aldrey, J. L., Venezuela, S. A.
 Anderson, E. K., Aurburndale, Fla.
 Bast, W. F., Morgantown, N. C.
 Blount, T. C., Charlotte, N. C.
 Boggs, R. E., Birmingham, Ala.
 Booker, L. R., Charlotte, N. C.
 Cannon, N. S., Hendersonville,
 N. C.
 Carithers, A. G., Fort Valley, Ga.
 Cate, C. J., North Wilkesboro,
 N. C.
 Colbert, F. H., Ardmore, Okla.
 Coleman, P. W., Anniston, Ala.
 Creighton, J. T., Atlanta, Ga.
 Daniel, D. M., Charlotte, N. C.
 Dennis, A. J., Macon, Ga.
 Dick, R. L., Lakeland, Fla.
 Dunham, F. E., Stewart, Fla.
 Fagan, H. C., Fort Valley, Ga.
 Floyd, T. H., LaGrange, Ga.
 Freeland, B. W., Crawley, La.
 Graham, F. A., Smithfield, Pa.
 Hambright, C. H., Kings Moun-
 tain, N. C.
 Harding, T. L., Yadkinsville, N. C.
 Harris, A. A., Blue Mountain, Ala.
 Horn, M. D., Tallasslle, Ala.
 Hoyt, L. W., Esterwood, La.
 Huffstetler, A. D., Kings Moun-
 tain, N. C.
 James, S. H., Waycross, Ga.

Johnson, S. C., Terre Haute, Ind.
 Johnson, E. M., West Point, Ga.
 Kehew, C. L., South Harpersville,
 Maine.
 Kent, Geo. P., Bloomfield, N. J.
 King, J. E., Rock Mount, N. C.
 Longley, J. M., LaGrange, Ga.
 Martin, M. V., Paris, France.
 Miller, C. L., Chattanooga, Tenn.
 Moran, W. C., Waycross, Ga.
 Muthiah, A. D., India.
 Parker, E. G., Shelby, N. C.
 Roberts, O. A., Walters, Okla.
 Roberts, W. J., Athens, Ga.
 Salley, E. M., Jr., Saluda, N. C.
 Sanftleben, D. A., Jamaica.
 Smith, F. V., Charlotte, N. C.
 Smythe, E. A., Henderson, N. C.
 Smythe, J. A., Henderson, N. C.
 Somers, Q. C., Saluda, N. C.
 Tolbert, E. H., Sarancak Lake,
 N. Y.
 Tate, H. F., Union Mills, N. C.
 Tsukeyurna Yutaka, Japan.
 Vogel, T. R., Washington, D. C.
 Wigfall, C. Y.,
 Williams, J. S., Washington, D. C.
 Wilson, J. W., Villa Rica, Ga.
 Wood, T. C., Washington, D. C.
 Young, T. C., Conyers, Ga.
 Zagora, O. F., Charlotte, N. C.

Report of the Treasurer

Clemson College, S. C., July 1st., 1923.

To the Finance Committee of the Board of Trustees:

(Through Dr. W. M. Riggs, President.)

Gentlemen:—

I have the honor of transmitting herewith my Annual Report of the financial affairs of The Clemson Agricultural College of South Carolina for the fiscal year ending June 30, 1923.

Respectfully submitted,

S. W. Evans,
Secretary-Treasurer.

RESOURCES

Income—

| | |
|---|---------------------|
| Balance on hand July 1, 1922. | \$ 71,502.87 |
| Privilege Fertilizer Tax | \$169,717.53 |
| Morrill and Nelson Fund | 25,000.00 |
| Interest on Landscrip | 5,754.00 |
| Interest on Clemson Bequest | 3,512.36 |
| Tuition from Students | 14,815.97 |
| Rents | 13,121.01 |
| Matriculation and Laboratory Fees..... | 5,548.04 |
| Interest and Miscellaneous Receipts | 8,643.15—246,112.06 |

From Other Sources—

| | |
|--|------------------------|
| State Loan | \$150,000.00 |
| Appropriation for Collegiate Instruction | 46,175.20—\$196,175.20 |
| Total | \$513,790.13 |

EXPENDITURES

CR.

| | |
|--|------------------------|
| Scholarships and Advertisements | \$13,889.79 |
| Fertilizer Inspection and Analysis | 27,085.62—\$ 40,975.41 |

College Operating Expenses—

| | |
|---|------------------------|
| Salaries | \$155,954.35 |
| Coal, Labor, Supplies, etc | 95,051.50 |
| Payment on Note | 11,284.21 |
| Interest on Note | 6,770.52—\$ 269,060.58 |
| Equipment for Teaching | \$ 15,815.53 |
| Permanent Additions and Improvement | 39,027.28—\$ 54,842.81 |
| Total | \$ 364,878.80 |

| | |
|--|---------------|
| Reserve on hand June 30, 1923, necessary to carry College during season of small Fertilizer sales, July 1 to January 1. | \$ 148,911.33 |
| Total | \$ 513,790.13 |

The following is a more detailed statement, showing the expenditures and cost of the Public Service Work, and each Department and Division of the College, under the items appropriated by the Board of Trustees:

PUBLIC STATE WORK DEPARTMENT

Scholarships and Advertisements—

| | | |
|---------------------------------------|----------------|-----------|
| Scholarships and Advertisements | \$13,889.79—\$ | 13,889.79 |
|---------------------------------------|----------------|-----------|

Fertilizer Inspection and Analysis—

| | | |
|--------------------------------------|-----------|-----------|
| Salaries—Chemists | 7,499.99 | |
| Chemicals | 500.00 | |
| Apparatus | 289.95 | |
| Gasoline | 386.65 | |
| Recordbooks, Postage, etc | 180.11 | |
| Incidentals | 42.78 | |
| Labor—Janitor | 300.00 | |
| Extra Help in Lab'y and Office | 420.00 | |
| Emergency Supplies, Labor, etc | 589.10 | |
| Travelling Expenses | 63.64 | |
| Salaries Secty and Clerk | 4,000.00 | |
| Labor—Janitor (Fert. Inspt) | 600.00 | |
| Inspection Tags and Printing | 4,500.00 | |
| Pay & Travel of Inspectors | 6,669.50 | |
| Freight, Postage, etc | 457.40 | |
| Legal Services | 250.00 | |
| Fertilizer Bulletins | 336.50—\$ | 27,085.62 |

| | | |
|--------------------------------------|----|-----------|
| Public State Work Expenditures | \$ | 40,975.41 |
|--------------------------------------|----|-----------|

COLLEGE WORK

ACADEMIC DEPARTMENT

English Division—

| | | | |
|-----------------------|---------|-------|-------|
| Repairs | \$ | 19.60 | |
| Stationery, etc | 9.87—\$ | | 29.47 |

History Division—

| | | | |
|---------------------------------|----|----------|-------|
| Periodicals for Class Use | \$ | 12.00—\$ | 12.00 |
|---------------------------------|----|----------|-------|

Mathematics Division—

| | | | |
|---------------|----|----------|-------|
| Repairs | \$ | 18.86—\$ | 18.86 |
|---------------|----|----------|-------|

Office and Unclassified Division—

| | | |
|-----------------------------------|-----------|--------|
| Janitor (Upper floor) | 377.71 | |
| Office and Janitor Supplies | 144.11 | |
| Class Room Seats | 200.00—\$ | 721.82 |

Physics Division—

| | | |
|---------------------------------------|-----------|--------|
| Laboratory Supplies & Repairs | \$ 135.00 | |
| Apparatus for Mechanics and Heat..... | 139.57 | |
| Apparatus for Light and Sound | 63.61 | |
| Apparatus for Elec. and Magnetos..... | 175.19 | |
| Student Assistant | 63.74—\$ | 577.11 |

Salaries—

| | | |
|--|-----------------|-----------|
| Salaries—Professors and Assistants | \$ 32,816.59—\$ | 32.81F.59 |
|--|-----------------|-----------|

| | |
|--------------------------------------|---------------------|
| Department Expenditures | \$ 34,175.85 |
|--------------------------------------|---------------------|

AGRICULTURAL DEPARTMENT**Agricultural Education Division—**

| | | |
|----------------------------------|-----------|--------|
| Transportation of Students..... | \$ 138.67 | |
| Printing School Leaflets | 200.00 | |
| Lanterns Slides and Photos | 75.81 | |
| Office Furniture | 139.66 | |
| Laboratoy Equipment | 96.32—\$ | 650.46 |

Agromony Division—

| | | |
|--------------------------------------|-----------|---------|
| Cement, Gasoline, Oil, etc. | \$ 199.45 | |
| Seed, Score Cards, etc | 61.86 | |
| Repairs and Parts for Machines | 29.10 | |
| Materials for class use | 194.07 | |
| Cement, Gasoline, Oil, etc | 68.84 | |
| Misc. Small Lab'y Equipment | 486.97 | |
| Office equipment, Files, etc. | 100.25 | |
| Equipment for Farm Mach. Lab'y | 799.48—\$ | 1,94.02 |

Animal Husbandry Division—

| | | |
|---------------------------------------|-----------|--|
| Part salary-Herdsman | \$ 500.00 | |
| Labor | 586.72 | |
| Repairs to Fences | 245.00 | |
| Expenses to Judging Contest | 49.21 | |
| Feed and Fertilizer | 2,207.06 | |
| Veterinary Service | 189.36 | |
| Registration Books | 50.50 | |
| Farm Tools | 449.80 | |
| Misc. Small Tools and Equipment | 372.82 | |
| Judging Pavilion | 108.00 | |
| Water Pipe for lots | 150.00 | |
| Labor for New Fencing | 299.27 | |
| Pasture Improvements | 240.61 | |
| Dipping Vat (Cattle) | 64.33 | |

| | | |
|--|-----------|----------|
| Dipping Vat (Swine) | 110.28 | |
| Painting Hog Barn | 59.27 | |
| Doors—Judging Pavilion | 23.80 | |
| Moving and Setting Scales | 48.50 | |
| Silo—Beef Feeding Plant | 684.80 | |
| Adapting seed house for Herdsman..... | 500.00 | |
| Repairs to Herdsman's House | 195.95 | |
| Cotton and Hay Shed | 280.30—\$ | 7,415.58 |
| Botany and Bacteriology Division— | | |
| Botanical Publications | \$ 45.55 | |
| Glassware and Lab'y Supplies | 392.98 | |
| Collecting Materials | 390.21 | |
| Repairs and Replacements | 100.00 | |
| Eight Microscopes | 399.98 | |
| Thirty Stools | 60.00 | |
| Morphology Equipment | 100.00 | |
| Apparatus | 72.88—\$ | 1,561.60 |
| Dairy Division— | | |
| Wages—Creamery Foreman | \$ 900.00 | |
| Wages—Dairy Herdsman | 566.64 | |
| Dairy Herd Labor for Teaching | 494.82 | |
| Feed for Dairy Herd for Teaching | 492.14 | |
| Freight and Express | 59.11 | |
| Glassware and Chemicals | 479.08 | |
| Operating and Upkeep Expenses | 141.30 | |
| Repairs to Fences | 196.77 | |
| Repairs to Refrigerating Plant | 169.37 | |
| Expenses to Judging Contest | 36.26 | |
| Livestock Exhibit State Fair | 299.60 | |
| Cow Manger in W. Wing Hog Barn | 251.39 | |
| Service Hire from Calf Barn | 37.38 | |
| Water Troughs in Bull Pens | 75.00 | |
| Concrete Platforms | 20.00 | |
| Ice Box—Creamery | 40.00 | |
| Test Cow Stables | 754.33 | |
| Small Laboratory Equipment | 92.71 | |
| Creamery Equipment for Teaching | 107.34 | |
| zFeed Truck | 46.41 | |
| Barn Equipment | 41.35 | |
| Grading and Planting Shrubs | 48.55—\$ | 5,349.55 |
| Entomology and Zoology Division— | | |
| Class and Lab'y Materials | \$ 142.75 | |
| Labor | 23.60 | |
| Repairs to Instruments | 41.26 | |
| Spray and Dusting Machinery | 130.24 | |
| Microscopes for Lab'y | 147.07 | |
| Stools for Laboratory | 50.00—\$ | 534.92 |

Geology and Mineralogy Division—

| | | |
|---------------------------------------|-----------|--------|
| Laboratory Supplies and Repairs | \$ 54.40 | |
| Labor | 28.45 | |
| Maps and Folios | 25.00 | |
| Lantern Slides | 23.35 | |
| Ceramics Testing Furnace | 100.00—\$ | 231.20 |

Horticultural Division—

| | | |
|--------------------------------------|-----------|----------|
| Part Salary Greenhouse Foreman | \$ 660.00 | |
| Part Salary Hort. Foreman | 600.00 | |
| Labor | 899.12 | |
| Fertilizers | 149.66 | |
| Seed, Plants, etc. | 199.95 | |
| Greenhouse Supplies and Repairs..... | 101.63 | |
| Coal for Greenhouse | 99.79 | |
| Spray Apparatus and Materials..... | 99.75 | |
| Feed for two mules | 249.75 | |
| Tools for Class use | 99.62—\$ | 3,159.27 |

Office and Unclassified Division—

| | | |
|---------------------------------------|-------------|----------|
| Janitors and Janitor Supplies | \$ 1,247.44 | |
| Gasoline | 200.49 | |
| Attendance on Conventions | 59.30 | |
| Stationery and Postage for Dept. | 496.15 | |
| Upkeep of Building | 163.27 | |
| Window Shades for Building | 73.30 | |
| Two Telephones | 39.72—\$ | 2,279.67 |

Veterinary Science Division—

| | | |
|------------------------------------|-----------|--------|
| Janitor and Extra Labor..... | \$ 500.00 | |
| Coal | 49.90 | |
| Veterinary Journals | 4.00 | |
| Repairs to Fences and Stalls | 74.09 | |
| Laboratory Supplies | 98.10—\$ | 726.09 |

Salaries—

| | | |
|--|-----------------|-----------|
| Salaries—Professors and Assistants ... | \$ 33,962.22—\$ | 33,962.22 |
|--|-----------------|-----------|

| | |
|-------------------------------|--------------|
| Department Expenditures | \$ 57,810.58 |
|-------------------------------|--------------|

CHEMICAL DEPARTMENT**Chemistry Division—**

| | | |
|------------------------------------|-----------|----------|
| Chemical Apparatus | \$ 400.00 | |
| Chemicals and Supplies | 597.50 | |
| Gasoline | 300.00 | |
| Books, Journals and Bindings | 189.85 | |
| Repairs to Apparatus | 79.93 | |
| Incidentals | 149.94 | |
| Janitor and Office Helper | 660.00 | |
| Repairs to Plumbing | 65.94 | |
| Chemical Apparatus | 599.73—\$ | 3,042.89 |

Salaries—

| | | | | |
|---------------------------------|----|----------|-----|----------|
| Professors and Assistants | \$ | 8,999.98 | —\$ | 8,999.98 |
|---------------------------------|----|----------|-----|----------|

| | | | | |
|-------------------------------|--|--|----|-----------|
| Department Expenditures | | | \$ | 12,042.87 |
|-------------------------------|--|--|----|-----------|

ENGINEERING DEPARTMENT**Civil Engineering Division—**

| | | | | |
|--|----|----------|-----|----------|
| Class Materials | \$ | 86.34 | | |
| Repairs and Replacements | | 92.52 | | |
| Equipment for Testing Laboratory | | 3,453.98 | | |
| One Transit | | 365.87 | | |
| One Level | | 133.59 | | |
| Class Room Seats | | 49.02 | —\$ | 4,181.32 |

Drawing Division—

| | | | | |
|--|----|--------|-----|--------|
| Materials, Ink, Paper, etc. | \$ | 29.31 | | |
| Repairs and Renewal of apparatus | | 70.49 | | |
| Expenses of Architects' Contest | | 25.94 | | |
| Subscriptions to Magazines | | 59.50 | | |
| Student Help in Blue Printing | | 22.90 | | |
| Desks and Lockers | | 200.00 | | |
| Plaster Cases | | 25.00 | | |
| Reference Books | | 49.60 | —\$ | 482.74 |

Electrical Engineering Division—

| | | | | |
|---|----|--------|-----|--------|
| Laboratory Supplies | \$ | 108.94 | | |
| Repairs and Renewals | | 104.98 | | |
| Class and Lab'y notes for Students..... | | 29.96 | | |
| Student Assistance | | 175.20 | | |
| Reference Books, etc. | | 39.95 | | |
| Switch Board Wiring and Charges..... | | 144.68 | | |
| Special G-6 Motor | | 25.00 | | |
| Oscillograph Outfit | | 172.00 | —\$ | 800.71 |

Forge and Foundry Division—

| | | | | |
|-------------------------------------|----|----------|-----|----------|
| Labor for Forge and Foundry | \$ | 1,380.00 | | |
| Repairs and Replacements | | 75.00 | | |
| Forge Shop Supplies | | 300.00 | | |
| Coal for Forge Shop | | 374.51 | | |
| Foundry Supplies | | 49.97 | | |
| Pig Iron and Brass for Foundry..... | | 150.00 | | |
| Moulding Sand | | 57.00 | | |
| Coke for Foundry | | 65.00 | | |
| Six New Forges | | 187.39 | | |
| Ventilating Fan and Motor | | 101.84 | —\$ | 2,740.71 |

Machine Shop Division—

| | | | | |
|--------------------------------|----|--------|--|--|
| Labor, Machinist | \$ | 750.00 | | |
| Repairs and Replacements | | 188.37 | | |
| Shop Materials | | 299.98 | | |
| Grinding Attachment | | 43.57 | | |

| | | |
|---|----------------|--------------------|
| Side Milling Cutting Attachment | 69.97 | |
| Magnetic Chuck | 110.00—\$ | 1,461.89 |
| Mechanical Engineering Division— | | |
| Laboratory Supplies | \$ 134.62 | |
| Repairs and Replacements | 34.10 | |
| Transfer of Equipment | 498.99 | |
| Viscosimeter | 109.97 | |
| Tachometer | 65.00—\$ | 842.68 |
| Office and Unclassified Division— | | |
| Labor—Janitor | \$ 600.00 | |
| Office and Janitor Supplies | 209.59 | |
| Upkeep of Building | 39.77 | |
| Attendance on Conventions | 62.59 | |
| Incidentals | .72 | |
| Extra Class Room Seats | 225.00 | |
| Equipment of New Room for Designing | 60.00—\$ | 1,197.67 |
| Wood Shop Division— | | |
| Labor—Machinist | \$ 397.15 | |
| Supplies as Lumber, etc. | 473.28 | |
| Repairs and Replacements | 325.93 | |
| Removal of Equipment to New Shop | 249.68 | |
| Eight Special Lathes | 216.47—\$ | 1,662.51 |
| Salaries— | | |
| Salaries—Professors and Assistants | \$34,166.66—\$ | 34,166.66 |
| Department Expenditures | | \$47,536.89 |

MILITARY DEPARTMENT

| | | |
|--|----------------|--------------------|
| Office and Unclassified Division— | | |
| Postage, Stationery, etc | \$ 485.26 | |
| Military Supplies | 56.80 | |
| Upkeep of Band | 98.45 | |
| Officer's Sabres | 159.00 | |
| Cadet Officer's Insignia | 325.00 | |
| New Band Instruments | 125.02 | |
| Rebuilding Target Range | 125.02 | |
| Office Equipment | 55.02 | |
| Drill Sabres for Cadet Officers | 35.00 | |
| Typewriter for Office | 74.00—\$ | 1,513.55 |
| Salaries— | | |
| Salaries—Commandant and Assistants | \$ 5,066.65—\$ | 5,066.65 |
| Department Expenditures | | \$ 6,580.20 |

TEXTILE DEPARTMENT

Carding and Spinning Division—

| | | | |
|-------------------------------|----|----------|--------|
| Cotton for Class Use | \$ | 165.00 | |
| Repairs and Supplies | | 179.66 | |
| Materials for Class Use | | 94.65 | |
| Yard Numbering Machine | | 50.00—\$ | 489.31 |

Dyeing Division—

| | | | |
|-------------------------------------|----|----------|--------|
| Chemicals and Dye Stuffs | \$ | 173.55 | |
| Glassware and Lab'y Materials | | 192.42 | |
| Mics. Small Lab'y Apparatus | \$ | 191.68 | |
| Installation of Apparatus | | 25.72—\$ | 583.37 |

Office and Unclassified Division—

| | | | |
|------------------------------------|----|-----------|----------|
| Janitor and Engineer | \$ | 1,128.60 | |
| Gasoline | | 75.52 | |
| Stationery, Postage, etc. | | 52.39 | |
| Student Labor | | 79.90 | |
| Mill Boy Helper | | 298.30 | |
| Textile Periodicals | | 13.05 | |
| Freight on Donated Machinery | | 98.66 | |
| Belting, Pulleys, etc. | | 49.80 | |
| Additional class Room Chairs | | 23.50 | |
| Additional Class Room Seats | | 121.54—\$ | 1,941.26 |

Weaving Division—

| | | | |
|---|----|-----------|--------|
| Warp and Filling Yarn | \$ | 561.01 | |
| Loom Supplies and Repairs | | 158.01 | |
| Knitting Yarn and Samples for Analysis..... | | 23.52 | |
| Drawing Frame | | 239.00—\$ | 981.54 |

Salaries—

| | | | |
|--|----|--------------|-----------|
| Salaries—Professors and Assistants | \$ | 10,300.00—\$ | 10,300.00 |
|--|----|--------------|-----------|

| | | | |
|-------------------------------|--|----|-----------|
| Department Expenditures | | \$ | 14,295.48 |
|-------------------------------|--|----|-----------|

PUBLIC UTILITIES DEPARTMENT

Campus Division—

| | | | |
|---------------------------------------|----|----------|--|
| Part Salary Campus Foreman | \$ | 660.00 | |
| Labor for Campus | | 1,518.97 | |
| Fertilizers | | 249.38 | |
| Seed, Plants and Trees | | 190.65 | |
| Feed and Upkeep—4 mules..... | | 468.13 | |
| Tools, Machinery and Repairs | | 146.78 | |
| Auto Signs and Markers | | 48.92 | |
| Storm Water Drainage | | 1,000.00 | |
| Coping for Road..... | | 512.28 | |
| Development for Expt. Sta. Road | | 291.01 | |
| Trees, Plants, etc. | | 149.69 | |
| Development—New Laundry | | 249.80 | |

SUPPLEMENTARY REPORTS

73

| | | |
|---|-----------|----------|
| Development—New Area Barracks No. 1..... | 73.75 | |
| Mowing Machine | 75.00 | |
| Trash Boxes | 100.00 | |
| East Stone Entrance | 500.00 | |
| Development at Broad Casting Station | 199.62—\$ | 6,433.98 |
| Construction and Repair Division— | | |
| Office Supplies | \$ | 46.99 |
| Repairs and Renewals | | 21.65 |
| Tools and Implements | | 24.90 |
| Gasoline and Tires for Truck | | 93.01 |
| Stack for Lumber | | 294.59 |
| Repairs to Public Buildings | 4.20 | 257 |
| Misc. Nnforsen Reprs. to Public Bldgs. | 1,543.31 | |
| Repairs to Residences | 4,166.04 | |
| Misc. Unforeseen Reprs. to Residences | 713.50 | |
| Ceiling Class Room—Rosenkrans | 126.67 | |
| Ceiling Class Room—Aull | 90.91 | |
| Making two Floors—Museum | 839.86 | |
| Heat, Light and Water for above | 190.00 | |
| Paint outside Basket Ball Bldg. | 104.00 | |
| Connice roof N. End Basket Ball Bldgs. ... | 36.62 | |
| Ladies Dressing Room—Basket Ball Bldgs. ... | 32.25 | |
| Stoves for Heating Basket Ball Bldg. | 39.20 | |
| Completion 2nd. story wood shop | 345.87 | |
| Toilet Ladies Recp. Room Basket Ball Bldg. ... | 145.59 | |
| Partitioning up Mech-Lab'y | 908.22 | |
| Completing Blue Print Room | 90.00 | |
| Wire Guards—Basement Barracks No. I..... | 189.68 | |
| Closing Windows D. Room to Wash Room | 139.35 | |
| New Doors for Armory | 38.88 | |
| Chipped Glass for Windows | 164.73 | |
| Enlarging toilet, etc., Cadet Hospital..... | 183.54 | |
| Close in Rear Porch—Cadet Hospital..... | 65.29 | |
| Tiolet and Bath—Hotel | 207.02 | |
| Completion of P. O. Equipment | 327.66 | |
| Partitioning off Class Rooms | 229.36 | |
| Supply Room—Textile Dept. | 131.78 | |
| Close up Stairway—Textile Dept. | 9.60 | |
| Radiators in Cafe—Y. M. C. A. | 49.33 | |
| Two Windows—Crandall | 29.92 | |
| Double door—Hunter | 23.33 | |
| Extend D. Room and Kitchen—Front Porch —Mitchell | 581.50 | |
| Enlarge toilet—Pickett | 19.28 | |
| Plaster Kitchen—Conradi | 47.59 | |
| Lavatory—Winters | 14.20 | |
| Salary—Supt. Hewer | 1,800.00 | |
| New Laundry Bldg. | 9.10 | |
| Radio House | 1,055.65 | |

| | | |
|--|-------------|---------------------|
| Sanitary Closets—Campus | 306.71 | |
| Toilet and D. Rooms for Barracks Help..... | 667.33 | |
| Memorial Tablet—W. S. M. | 50.00 | |
| Memorial Tablet—McHugh | 25.00 | |
| Screening low class Room windows | 535.95 | |
| Approved Well Fixtures | 500.00 | |
| Extension N. Wing Barracks No. 1..... | 3,518.46 | |
| Pay for Timms on sick leave | 41.40—\$ | 25,017.39 |
| Farm Division— | | |
| Ditching on Bottom | \$ 400.00 | |
| Repairs to Barn | 195.05—\$ | 595.05 |
| Heat, Light and Water Division— | | |
| Labor—Engineers, Fireman, etc. | \$ 6,870.75 | |
| Supplies | 1,899.25 | |
| Coal | 13,896.98 | |
| Repairs | 272.94 | |
| Water leakage detector | 74.97 | |
| Equipment for Wood Shop Toilet..... | 59.99 | |
| Power Station Equipment | 20,425.44 | |
| Repairs to Coal Chute | 572.18 | |
| Chloremeter for Filtration Plant | 499.86—\$ | 44,572.36 |
| Roads and Hauling Division— | | |
| Labor, truck drivers, etc. | \$ 2,042.34 | |
| Hire of teams from Farm | 203.34 | |
| Gasoline, oil, tires repairs, etc. | 1,299.61 | |
| Additional road Machinery | 500.00 | |
| Salary, Supt. | 1,500.00—\$ | 5,545.29 |
| Telephone System— | | |
| Upkeep of System | \$ 150.06 | |
| Labor, Operator and Repairs | 691.04—\$ | 841.10 |
| Night Watchman— | | |
| Salary Watchman and Special Police..... | \$ 800.00 | |
| Watchman, Supplies | 28.51 | |
| Salary, Campus—Marshall | 786.14—\$ | 1,614.65 |
| Department Expenditures | | \$ 84,619.82 |

MISCELLANEOUS DEPARTMENT

Library Division—

| | | |
|------------------------------------|-------------|----------|
| Magazines | \$ 282.50 | |
| Binding | 400.00 | |
| Supplies | 35.28 | |
| Membership dues to Societies | 15.00 | |
| Books | 1,000.65 | |
| Book Stocks | 120.00 | |
| Filing Cabinets | | |
| Flag Case | 39.25 | |
| Salaries—Librarian and Asst. | 2,490.00—\$ | 4,382.68 |

Miscellaneous Items Division—

| | |
|---|---------------------|
| Salary Stenographer (Keith)..... | \$ 385.33 |
| Exp. of Trustees and Board of Visitors..... | 1,116.78 |
| Insurance | 5,335.51 |
| Contingent and Incidentals Exp. | 3,000.00 |
| Ministers | 2,190.70 |
| Y. M. C. A. Secty. | 500.00 |
| College Catalogue | 765.00 |
| Annual reports (reprints, etc.) | 82.90 |
| Commencement Expenses | 290.84 |
| Trustees Medals | 29.25 |
| Chapel Lecture | 65.00 |
| Membership to Nat. Association | 96.00 |
| Examination Booklets | 300.22 |
| Pension of J. B. Stephens | 300.00 |
| Scavenger Service | 480.00 |
| State Fair Exhibit | 499.21 |
| Travel and entertainments, Leg. Com. etc. | 397.65 |
| Summer School | 500.00 |
| One tenth principal of Loan | 11,284.21 |
| Int. on \$112,842.11 at 6 percent | 6,770.52 |
| Ford Runabout | 495.00 |
| Radio Recieving set | 246.52 |
| Salary Magistrate | 100.00 |
| Boys Club Work Scholarship | 600.00—\$ 35,830.64 |

President's Office—

| | |
|--|------------------------|
| Students Cards, forms, etc. | \$ 715.98 |
| Stamps, Stationery and Supplies | 951.59 |
| Traveling Expenses | 678.09 |
| Janitor, Janitor Supplies | 600.00 |
| Salaries, President—Registrar, Dir. of Student Affairs, Stenographer, etc. | 15,960.08—\$ 18,905.74 |

Treasurer's Office—

| | |
|--|--------------------|
| Students cards, forms, etc. | \$ 600.00 |
| Record Books, Stationery, postage etc..... | 775.00 |
| Emergency Asst. | 720.00 |
| Premiums on bonds | 112.50 |
| Salaries—Treas. and Bookkeepers | 4,930.00 |
| Audit of Book and accounts (Season) | 585.14—\$ 7,722.64 |

| | |
|--------------------------------------|---------------------|
| Department Expenditures | \$ 66,841.70 |
|--------------------------------------|---------------------|

RECAPITULATION

| | |
|-----------------------------------|------------------------|
| Public State Work | \$ 40,975.41 |
| Academic Department | 34,175.85 |
| Agricultural Department | 57,810.58 |
| Chemical Department | 12,042.87 |
| Engineering Department | 47,536.89 |
| Military Department | 6,580.20 |
| Textile Department | 14,295.48 |
| Public Utilities Department | 84,619.82 |
| Miscellaneous Department | 66,841.70—\$364,878.80 |

CADET FUND

Receipts—

| | |
|------------------------------------|------------------------|
| Balance on hand July 1, 1922 | \$ 13,454.01 |
| Activity Fees | 11,448.92 |
| Breakage | 3,521.45 |
| Diplomas | 475.05 |
| Room, Heat, Light, Water | 15,140.95 |
| Hospital | 11,665.77 |
| Incidentals | 7,903.37 |
| Laundry | 12,715.81 |
| Subsistence | 143,708.82 |
| Uniforms | 29,672.20—\$236,252.34 |
| | <hr/> |
| | \$249,706.35 |
| | <hr/> |

Expenditures—

Expenditures from balance on hand July 1st., 1922—

| | |
|------------------------------------|----------------------|
| Labor—Carpentering, etc. | \$ 2,896.79 |
| Freight and Express | 7.54 |
| Telegraph and Telephone | 30 |
| Repairs | 61.13 |
| Gasoline | 3.06 |
| Clothing and Dry Goods | 173.57 |
| Supplies | 260.02 |
| Feed and Veterinary Supplies | 75.00 |
| Materials, etc. | 1,511.91 |
| Equipment | 2,118.65—\$ 7,107.97 |

Activity Fees—

| | |
|--|----------|
| Salaries—Coach and Asst. | 2,608.29 |
| Labor | 302.64 |
| Officials and Umpires | 20.00 |
| Guarantees and Exps. visiting Teams..... | 1,651.28 |
| Travel—Clemson Teams..... | 2,244.93 |
| Rain Insurance | 40.32 |
| Supplies | 1,660.49 |

| | |
|---|-----------------------|
| Bleachers, Benches and Fencing..... | 200.56 |
| Student Membership—Y. M. C. A. | 400.00 |
| Student Publications, Posters, etc. | 311.50 |
| Freight and Express | 13.71 |
| Telegraph, Telephone and Poastage..... | 45.54 |
| Hospital, Medical and Dental Fees.....\$ | 117.13 |
| Assoc. Dues and Exps. of Delegates..... | 41.24 |
| Lyceum Entertainments | 150.00 |
| Refunds to Students | 109.65 |
| Transfer to Ath. Assoc. to reduce O. D..... | 1,531.64—\$ 11,448.92 |

Breakage—

| | |
|-----------------------------|-------------------|
| Labor—Carpentering | \$ 1,146.64 |
| Freight and Express | 92.12 |
| Printing, etc. | 91.06 |
| Misc. Supplies | 746.79 |
| Refunds to Students | 75.00 |
| Materials | 358.99 |
| Household Equipment | 969.16 |
| Educational Equipment | 41.75—\$ 3,521.45 |

Diplomas—

| | |
|----------------|----------------|
| Diplomas | \$ 407.97 |
| Ribbons | 8.00 |
| Seals | 2.06—\$ 418.03 |

Room, Heat, Light and Water—

| | |
|----------------------------|--------------------|
| Labor—Engineers, etc. | \$ 3,095.63 |
| Freight and Express | 9.95 |
| Telegrams | .40 |
| Repairs | 206.56 |
| Coal | 9,795.68 |
| Educational Supplies | 2.33 |
| Misc. Supplies | 1,697.94 |
| Refunds to Students | 274.18 |
| Materials | 93.53—\$ 15,176.20 |

Hospital Division—

| | |
|-------------------------------------|----------|
| Salaries | 5,100.06 |
| Labor | 1,139.55 |
| Consultations, etc. | 30.00 |
| Freight and Express | 63.41 |
| Traveling Expenses | 23.92 |
| Publications, etc. | 60.35 |
| Laundry, etc. | 239.60 |
| Coal, etc. | 258.28 |
| Food Supplies | 1,161.71 |
| Office Supplies | 52.36 |
| Medical and Surgical Supplies | 1,245.22 |
| Refrigerating Supplies | 90.00 |
| Misc. Supplies | 229.67 |
| Refunds to Students | 114.13 |

SUPPLEMENTARY REPORTS

| | |
|--------------------------------------|-------------------|
| Medical and Surgical Equipment | 151.62 |
| Household Equipment | 298.08 |
| Misc. Equipment | 9.90—\$ 10,267.80 |

Incidentals—

| | |
|--|--------------------|
| Salary—Q. Master | \$ 750.00 |
| Labor—Care of Barracks | 2,864.40 |
| Freight and Express | 298.50 |
| Repairs | 54.65 |
| Office Supplies | 43.00 |
| Cleaning and Disinfecting Supplies | 437.56 |
| Misc. Supplies | 1,834.73 |
| Refunds to Students | 88.93 |
| Household Equip. Chairs, etc., for Rooms | 445.89—\$ 6,817.66 |

Laundry—

| | |
|------------------------------------|---------------------|
| Labor | \$ 7,939.01 |
| Freight and Express | 36.62 |
| Repairs | 7.58 |
| Misc. Printed Forms | 175.75 |
| Coal | 498.95 |
| Feed and Veterinary Supplies | 218.35 |
| Office Supplies | 47.75 |
| Laundry Supplies | 2,648.69 |
| Gasoline and Oil | 22.50 |
| Clothing and Dry Goods | 98.25 |
| Misc. Supplies | 12.31 |
| Equipment | 351.62 |
| Refund to Students | 171.74—\$ 12,229.12 |

Subsistence—

| | |
|---------------------------|---------------------|
| Salaries | 5,000.00 |
| Labor | 18,900.80 |
| Groceries | 109,796.29 |
| Coal | 638.12 |
| Misc. Supplies | 3,855.41 |
| Refunds to Students | 2,165.44 |
| Equipment | 295.20—\$140,651.26 |

Uniforms—

| | |
|----------------------------|-----------------------|
| Uniforms garments .. | 24,454.75 |
| Refunuds to Students | 5,217.45—\$ 29,672.20 |

| | |
|-------------------------------------|---------------------|
| | <u>\$237,310.61</u> |
| Balance on hand June 30, 1923 | 12,395.74 |
| | <u>\$249,706.35</u> |

STUDENT BANKING ACCOUNT**Receipts—**

| | |
|----------------|--------------|
| Deposits | \$ 80,682.50 |
| | <hr/> |
| | \$ 80,682.50 |
| | <hr/> |

Expenditures—

| | |
|---------------------------------|------------------------|
| Overdraft July 1st., 1922 | \$ 73.22 |
| Checks paid | 77,967.41—\$ 78,040.63 |
| | <hr/> |
| Balance June 30, 1923 | 2,641.87 |
| | <hr/> |
| | \$ 80,682.50 |
| | <hr/> |

REVOLVING ACCOUNTS**Receipts—**

| | |
|---------------------------------------|--------------|
| Balance on hand July 1st., 1922 | \$ 30,824.94 |
| Receipts for Fiscal Year | 189,177.71 |
| | <hr/> |
| | \$220,002 65 |
| | <hr/> |

Expenditures—Veterinary Hospital—

| | |
|---|------------------|
| Wages—Janitoring | \$ 116.92 |
| Freight, Express and Deliveries | 6.33 |
| Feed and Veterinary Supplies | 839.61 |
| Laundry and Disinfecting Supplies | 25.00 |
| Misc. Supplies | 8.47 |
| Equipment | 6.80—\$ 1,003.13 |

Hog Cholera Serum Work—

| | |
|------------------------------------|---------------------|
| Salaries—Clerks | \$ 3,000.00 |
| Telegraph and Telephone | 21.74 |
| Feed and Veterinary Supplies | 24,367.82 |
| Office Supplies | 191.28—\$ 27,580.84 |

Nursery Inspection Tags—

| | |
|---------------------------|----------------------|
| Freight and Express | \$ 19.71 |
| Supplies (Tags) | 1,024.44—\$ 1,044.15 |

Manufacturing States Flags—

| | |
|----------------|----------------|
| Labor | \$ 5.00 |
| Supplies | 38.96—\$ 43.96 |

Summer School—

| | |
|--------------------------------|-------------|
| Salaries—Instructors | \$ 3,300.00 |
| Labor | 510.03 |
| Food Supplies | 8,487.57 |
| Traveling Expenses | 14.00 |
| Printing and Advertising | 193.00 |

SUPPLEMENTARY REPORTS

| | | |
|-----------------------------|-------|--------------|
| Office Supplies | 40.50 | |
| Other Supplies | 32.70 | |
| Educational Equipment | 70.76 | \$ 12,648.56 |

Education of Disabled Soldiers—

| | | |
|--|--------------|--------------|
| Salaries—Instructors | \$ 16,375.45 | |
| Labor | 683.31 | |
| Special Personal Service | 496.71 | |
| Freight, Express, etc. | 4.92 | |
| Traveling Expenses | 522.16 | |
| Telegraph and Telephone | .25 | |
| Repairs | 12.50 | |
| Office Supplies | 57.18 | |
| Educational Supplies | 103.37 | |
| Agricultural and Botanical Supplies..... | 19.36 | |
| Misc. Supplies | 81.62 | |
| Refunds | 7.58 | |
| Materials | 115.54 | |
| Office Equipment | 61.00 | |
| Educational Equipment | 217.44 | |
| Buildings | 3,162.53 | \$ 21,920.92 |

Athletic Association—

| | | |
|---|-------------|--------------|
| Salaries—Coach and Assts. | \$ 5,649.97 | |
| Labor | 552.23 | |
| Officials and Umpires | 621.68 | |
| Guarantees and Exps. Visiting Teams | 4,459.66 | |
| Travel—Clemson Teams | 5,081.96 | |
| Rain Insurance | 637.25 | |
| Supplies | 4,326.56 | |
| Bleachers, Benches and Fencing | 1,848.93 | |
| Student Membership—Y. M. C. A. | 1,808.00 | |
| Students Publication, Posters, etc. | 1,454.21 | |
| Freight and Express | 73.42 | |
| Telegraph and Telephone and Postage | 190.23 | |
| Hospital, Medical and Dental Fees | 271.00 | |
| Assoc. Dues and Expenses of Delegates.... | 141.70 | |
| Lyceum Entertainment | 735.00 | |
| Contribution Near East Relief Fund | 603.32 | |
| Repay Loan—Stadium Fund | 2,428.98 | \$ 30,884.10 |

Textile Cotton Sales—

| | | |
|-------------------------------|-----------|-----------|
| Freight and Express | \$ 199.39 | |
| Telegraph and Telephone | 1.32 | |
| Educational Supplies | 224.34 | |
| Equipment | 8.04 | \$ 433.09 |

Commercial Wood Shop—

| | | |
|----------------------------|-----------|-----------|
| Labor | \$ 494.80 | |
| Supplies—Lumber, etc. | 153.78 | \$ 648.58 |

Cadet Exchange—

| | | |
|-----------------------------------|-----------|--------------|
| Salaries—Manager and Clerks | 667.35 | |
| Freight and Express | 132.87 | |
| Repairs | 10.50 | |
| Advertising, etc. | 51.00 | |
| Office Supplies | 7.50 | |
| Texts Books, etc | 16,993.70 | \$ 17,862.92 |

Students Loans and Medals—

| | | |
|-------------------------|-----------|-----------|
| Loans to Students | \$ 450.00 | |
| Medals (Norris) | 105.61 | \$ 555.61 |

Co-Operative Cotton Testing—

| | | |
|---------------------------------|-------------|-------------|
| Labor | \$ 1,718.65 | |
| Freight and Express | 27.25 | |
| Repairs | 132.96 | |
| Other Contractual Service | 87.84 | |
| Office Supplies | 16.70 | |
| Other Supplies | 83.07 | |
| Educational Equipment | 182.73 | |
| Misc. Equipment | 390.16 | \$ 2,639.36 |

Smith—Hughes Work—

| | | |
|---|--------------|--------------|
| Salaries—Supervisors and Teachers | \$ 21,788.03 | |
| Traveling Expenses | 3,241.52 | |
| Bulletins | 200.00 | |
| Office Supplies | 248.01 | |
| Misc. Supplies | 789.98 | \$ 26,267.54 |

Insurance Sinking Funds

| | | |
|--------------------------|----------|----------|
| Insurance Premiums | \$ 81.25 | \$ 81.25 |
|--------------------------|----------|----------|

Smith—Lever Interest Fund—

| | | |
|-----------------------------------|----------|-------------|
| Salaries | \$ 75.00 | |
| Labor | 68.08 | |
| Freight and Express | 128.69 | |
| Traveling Expenses | 177.20 | |
| Telegraph and Telephone | 64.18 | |
| Repairs | 3.94 | |
| Subscription to News Papers | 147.00 | |
| Other Contractual Services | 9.48 | |
| Office Supplies | 4.65 | |
| Misc. Supplies | 273.63 | |
| Office Equipment | 389.41 | |
| Radio Outfit, etc. | 3,398.75 | \$ 4,740.01 |

Rents—

| | | |
|-----------------------------------|-----------|--------------|
| Refunds | \$ 42.00 | |
| Materials | 30.00 | |
| Misc. Equipment | 90.00 | |
| Transfer to College Account | 13,121.01 | \$ 13,283.01 |

Miscellaneous—

| | | |
|-----------------------------------|----------|-------------|
| Freight and Express | \$ 37.36 | |
| Transfer to College Account | 1,054.11 | \$ 1,091.47 |

Receiving Account—

| | | |
|------------------------------------|-----------|--------------|
| Labor, 1922—1921 labor bills | \$ 453.92 | |
| Refunds | 24.39 | |
| Transfer to College Account | 13,137.08 | \$ 13,615.39 |

New Laundry Building—

| | | |
|-------------------------------|-------------|-------------|
| Labor—Carpenters, etc. | \$ 1,550.59 | |
| Architects Fee | 63.23 | |
| Telegrams and Telephone | 4.03 | |
| Freight and Express | 31.48 | |
| Gasoline | 36.77 | |
| Materials | 1,988.54 | \$ 3,674.64 |

 \$180,018.53

| | |
|-------------------------------------|-----------|
| Balance on Hand June 30, 1923 | 39,984.12 |
|-------------------------------------|-----------|

 \$220,002.65

Smith Lever Extension Fund—**Receipts—**

| | | |
|---------------------------------------|--------------|--------------|
| Federal Appropriation | \$156,014.49 | |
| State Appropriation | 110,862.85 | |
| *County Appropriations | 99,224.24 | |
| *Winthrop College Appropriation | 7,000.00 | \$373,101.58 |

* (\$99,224.24 County Funds and \$7,000.00 Winthrop College Funds included in this report, but not paid out by Treasurer of Clemson College.)

Expenditures—

| | | |
|--|-------------|--------------|
| Salaries—Director and Asst. Director | \$ 6,300.00 | |
| Salaries—State Supervising Agents | 13,792.34 | |
| Salaries—Specialists | 74,969.96 | |
| Salaries County Extension Agents | 180,353.18 | |
| Salaries—Stenographers and Clerks | 19,159.28 | |
| Labor | 1,038.56 | |
| Supplies | 4,657.57 | |
| Communication Service | 3,061.32 | |
| Traveling Expenses | 53,122.72 | |
| Freight and Express | 324.84 | |
| Publication | 6,377.83 | |
| Heat, Light and Water | 601.50 | |
| Furniture and Fixtures | 7,662.42 | |
| Library | 302.35 | |
| Tools, Machinery and Applicances | 144.53 | |
| Office rent | 1,233.18 | \$373,101.58 |

HATCH, ADAMS AND FARM PRODUCTS.

(South Carolina Expt. Station)

Receipts—

| | |
|---|------------------------|
| Balance on hand July 1, 1922 (Sales) | \$ 1,417.51 |
| Receipts from the Treasurer of the U. S. as per appropriations for fiscal year ended June 30th, 1923. | |
| Hatch Fund | \$ 15,000.00 |
| Adams Fund | 15,000.00 |
| Sale of Farm Products | 24,754.41—\$ 54,754.41 |
| | <u>\$ 56,171.92</u> |

Expenditures—

| | |
|---|---------------------|
| Salaries | \$ 19,086.54 |
| Labor | 13,316.04 |
| Publications | 88.85 |
| Postage and Stationery | 743.68 |
| Freight and Express | 1,107.48 |
| Heat, Light and Water and Power | 1,948.52 |
| Chemicals and Laboratory Supplies | 385.05 |
| Seeds, Plants, etc. | 3,584.01 |
| Fertilizers | 2,497.23 |
| Feeding Stuffs | 4,337.80 |
| Library | 827.00 |
| Tools, Machinery, etc. | 1,788.16 |
| Furniture and Fixtures | 1,367.42 |
| Scientific Apparatus, etc. | 627.46 |
| Live Stock | 1,425.25 |
| Traveling Expenses | 151.21 |
| Contingent Expenses | 50.65 |
| Building and Land | 910.86—\$ 54,243.21 |
| Balance on hand June 30, 1923 | 1,928.71 |
| | <u>\$ 56,171.92</u> |

AGRICULTURAL RESEARCH

(Reported by College Fiscal Year, Paid through Comptroller General's Office.)

| | |
|--|---------------------|
| Appropriation July 1st., 1922 to June 30th., 1923. | \$ 51,898.45 |
| | <u>\$ 51,898.45</u> |

SUPPLEMENTARY REPORTS

Expenditures July 1st., 1922 to June 30th., 1923—

| | |
|--|-----------------------|
| Salaries—Scientific Staff | \$ 10,963.85 |
| Salary—Asst. to Director | 1,900.02 |
| Salaries—Chemists | 1,800.00 |
| Salaries—Supt.—Farm and Stations | 9,249.98 |
| Salaries—Herdsman—Dairy and A. Hus. | 2,133.33 |
| Salaries—Foremen—Farm and Hort..... | 1,164.00 |
| Publications | 209.68 |
| Office Supplies | 309.56 |
| Labor with Experiments | 6,385.72 |
| Labor—Animal Hus. Div. | 1,751.71 |
| Labor—Dairy Div. | 507.00 |
| Silos | 400.00 |
| Labor—Miscellaneous | 269.72 |
| Seed and Fertilizers | 4,569.67 |
| Machinery and Equipment | 2,309.82 |
| Live Stock | 400.00 |
| Feed and Veterinary Supplies..... | 2,935.48 |
| Motor Vehicle Supplies..... | 94.88 |
| Miscellaneous Supplies | 109.27 |
| Office Equipment | 101.03 |
| Underdraining and Cleaning | 775.01 |
| Fencing | 435.70 |
| Misc. Small Equipment | 299.78 |
| Traveling Expenses | 2,823.24—\$ 51,898.45 |
| | <hr/> |
| | \$ 51,898.45 |
| | <hr/> |

CO-OPERATIVE BOLL WEEVIL CONTROL

(Reported by College Fiscal Year, Paid through Compt. General's Office.)

Appropriation, Jan. 1, to June 30, 1923\$ 12,950.73

Expenditures, Jan. 1, to June 30, 1923—

| | |
|-----------------------------------|-------------|
| Salary—Scientific Staff | \$ 3,016.61 |
| Salary—Stenographer | 85.00 |
| Salary—Temporary Assistants | 1,920.88 |
| Labor for Poisoning | 12.10 |
| Common Labor producing Crop | 172.25 |
| Traveling Expenses | 614.50 |
| Repair parts to Machine | 79.08 |
| Office Supplies | 55.75 |
| Motor Vehicle Supplies | 120.60 |
| Seeds and Fertilizers | 599.56 |
| Poison Supplies | 1,792.24 |

| | | |
|-----------------------------------|----------|---------------|
| Office Equipment | 500.00 | |
| Motor Vehicles | 1,021.19 | |
| Dusting and Spraying Mach'y | 483.93 | |
| Live Stock | 360.00 | |
| Insect Cages | 395.08 | |
| Office Building | 1,185.54 | |
| Miscellaneous Expenses | 536.42 | —\$ 12,950.73 |
| | | <hr/> |
| | | \$ 12,950.73 |
| | | <hr/> |

CROP PESTS AND DISEASES

(Reported by College Fiscal Year, Paid through Compt. General's Office.)

| | |
|--|-------------|
| Appropriation July 1, 1922, to June 30, 1923 | \$ 8,130.95 |
| | <hr/> |
| | \$ 8,130.95 |

Expenditures, July 1st., to June 30, 1923—

| | | |
|---------------------------------|-------------|--------------|
| Salaries—Scientific Staff | \$ 4,788.86 | |
| Clerk and Stenographer | 1,020.00 | |
| Labor—Poisoning Work | 165.94 | |
| Traveling Expenses | 1,500.85 | |
| Telegraph and Telephone | 55.00 | |
| Office Supplies | 502.50 | |
| Office Equipment | 97.80 | —\$ 8,130.95 |
| | | <hr/> |
| | | \$ 8,130.95 |

LIVE STOCK SANITARY WORK

(Reported by College Fiscal Year, Paid through Compt. General's Office.)

| | |
|--|--------------|
| Appropriation July 1st., 1922 to June 30, 1923 | \$ 51,285.58 |
| | <hr/> |
| | \$ 51,285.58 |

Expenditures, July 1st., 1922 to June 30, 1923—

| | | |
|--|--------------|---------------|
| Salaries Veterinarians | \$ 24,072.31 | |
| Salaries—Assts. to Veterinarians | 14,000.00 | |
| Deputy State Veterinarians Fee | 16.88 | |
| Traveling Expenses | 9,594.52 | |
| Telegraph and Telephone | 212.14 | |
| Office Supplies | 278.31 | |
| Other Supplies | 1,342.85 | |
| Rent | 885.53 | |
| Office Equipment | 133.03 | |
| Miscellaneous Equipment | 750.01 | —\$ 51,285.58 |
| | | <hr/> |
| | | \$ 51,285.58 |

TICK ERADICATION

(Reported by College, Fiscal Year. Paid through Compt. General's Office.)

| | |
|---|---------------------|
| Appropriation July 1, 1922 to June 30, 1923 | \$ 31,029.89 |
| | <u>\$ 31,029.89</u> |

Expenditure July 1, 1922 to June 30, 1923—

| | |
|---|---------------------|
| Salaries—Inspectors | \$ 23,552.66 |
| Salary—Clerk | 875.00 |
| Wages | 708.33 |
| Traveling Expenses..... | 50.00 |
| Laundry and Disinfecting Supplies | 5,497.62 |
| Miscellaneous Supplies..... | 346.28—\$ 31,029.89 |
| | <u>\$ 31,029.89</u> |

SLAUGHTERING DISEASED LIVE STOCK

(Reported by College Fiscal Year, Paid through Compt. General's Office.)

| | |
|---|--------------------|
| Appropriation July 1, 1922 to June 30, 1923 | \$ 2,573.74 |
| | <u>\$ 2,573.74</u> |

Expenditures, July 1, 1922 to June 30, 1923—

| | |
|---|--------------------|
| Payment to owners of Diseased Livestock | |
| which have been Condemned and Slaughtered | \$ 2,573.74 |
| | <u>\$ 2,573.74</u> |

RECAPITULATION**Receipts—****Cash on hand July 1st., 1922—**

| | |
|--|---------------------|
| College Account..... | \$ 71,502.87 |
| Cadet Fund | 13,454.01 |
| Revolving Funds | 30,824.94 |
| S. C. Expt. Sta. Sales Fund | 1,417.51 |
| | <u>\$117,199.33</u> |
| Less Overdraft Students banking Acct. | 73.22 |
| Total Balances on hand | <u>\$117,126.11</u> |

SUPPLEMENTARY REPORTS

87

| | |
|--------------------------------|------------|
| College Account | 442,287.26 |
| Cadet Fund | 236,252.34 |
| Students Banking Account | 80,682.50 |
| Revolving Funds | 189,177.71 |

Smith—Lever Ext. Work (Including \$99,224.24

County Funds and \$7,000.00 Winthrop College

funds not disbursed by this office) 373,101.58

S. C. Expt. Sta. (Hatch, Adams and Sales) 54,754.41

State Appropriations (Reported by College Fiscal year. Paid
through Compt. General's Office) —

Agricultural Research\$ 51,898.45

Co-Operative Boll Weevil Control 12,950.73

Crop Pests and Diseases 8,130.95

Live Stock Sanitary Work 51,285.58

Tick Eradication 31,029.89

Slaughtering Diseased Live Stock 2,573.74—\$157,869.34

\$1,651,251.25

Expenditures—

College Account\$364,878.90

Cadet Fund 237,310.61

Student Banking Account 77,967.41

Revolving Funds180,018.53

Smith—Lever Ext. Work, (including \$99,224.24

County Funds and \$7,000.00 Winthrop College

Funds not disbursed by this office)373,101.58

S. C. Expt. Sta. (Hatch, Adam and Sales) 54,243.21

State Appropriations (Reported by College

Fiscal Year, Paid through Compt. General's Office)---

Agri's Research\$ 51,898.45

Co-Operative Boll Weevil Control 12,950.73

Crop Pest and Diseases 8,130.95

Live Stock Sanitary Work 51,285.58

Tick Eradication 31,029.89

Slaughtering Diseased Livestock 2,573.74—\$157,869.34

\$1,445,389.48

Balance on hand June 30, 1923205,861.77

1,651,251.25

DISTRIBUTION OF CASH

(Close of Business June 30, 1923.)

| | |
|--|--------------|
| Farmers and Merchants Bank, Anderson S. C. | \$ 13,387.50 |
| National Bank of Sumter, Sumter S. C. | 39,000.00 |
| Palmetto National Bank, Columbia, S. C. | 32,000.00 |
| Farmers Bank, Abbeville, S. C. | 12,000.00 |
| Peoples Savings Bank, Abbeville, S. C. | 11,000.00 |
| Union Savings Bank, Bennettsville, S. C. | 35,000.00 |
| Bank of Greenwood, Greenwood, S. C. | 8,000.00 |
| The Fort Hill Bank, Clemson College, S. C. | 3,000.00 |
| Commercial Bank, Greenwood S. C. | 11,000.00 |
| Bank of Pendleton, Pendleton, S. C. (Interest Account) | 5,000.00 |
| National Bank, Newberry, S. C. (Smith—Lever) | 35,000.00 |

\$204,387.50

Cash in Office 2,641.87

\$207,029.37

Bank of Pendleton (Checking Account)—

| | |
|---|--------------|
| Checks outstanding General Acct. | \$ 26,918.45 |
| Checks outstanding Smith—Lever Acct. | 8,117.84 |
| Overdraft Smith—Lever Acct. | 26,882.16 |

\$ 61,918.45

Bank of Pendleton cr. bal. General Acct. 60,750.85—\$ 1,167.60

\$205,861.77

Report of the Board of Visitors

Clemson College, S. C., May 3, 1923.

To the Board of Trustees, Clemson Agricultural Mechanical College,
Clemson College, South Carolina.

Gentlemen:

The 1923 Board of Visitors, concluding an exceedingly pleasant and for them most profitable inspection of the college and its work, have only the warmest praise for what is being undertaken and accomplished at Clemson. It seems to them that the varied activities of the College have been planned with a fine grasp of the problems to be solved, while the thoroughness, the loyalty and the zeal with which these activities are being conducted by President Riggs and his associates have aroused their unbounded admiration and respect.

Two members of the 1923 Board of Visitors, Messrs. C. O. Hearon of Spartanburg for the Fourth District, and Christie Benet of Columbia for the Seventh District, could not be present. The others, Robert Lathan of Charleston for the First District, J. L. Mims of Edgefield for the Second District, Eugene S. Blease of Newberry for the Third District, William Godfrey of Cheraw for the Fifth District, and Dr. Olin Sawyer of Georgetown for the Sixth District, reached Clemson at midday of May 2nd and remained until mid-afternoon of May 3rd. They organized by the election of Dr. Sawyer as Chairman and Mr. Lathan as Secretary.

The Board's stay, while brief, included no vacant moments. They were able at least to look in upon all the various departments of the College; to gather some idea of the manner in which these departments were doing their work; to note how extensive is the scope of Clemson's obligations and to sense at least what the college has come to mean to South Carolina and its people. As suggested above, they were impressed first of all with the fine spirit of loyalty which they found everywhere in evidence. They were left in no doubt that the men who are responsible for the conduct of the college have their hearts in their work and are throwing themselves into this work unreservedly. They were impressed, too, with the splendid co-operation between President Riggs and all of his associates which was plainly to be noted. They wished that it could be generally appreciated throughout South Carolina how admirably all the different departments of the College, including of course those which have to do with Extension work throughout the State, are co-ordinated and how well they are functioning.

They lay stress upon the spirit which they found prevailing at the college, because they are persuaded that this is a matter of prime importance and that it means much for the college and for the State that those who are engaged in this important work should be giving themselves to it in the way that they are. The Board had the opportunity of discussing the college and its affairs at some length with the heads of the different departments at supper, and

afterwards, and they also mingled to some extent with the student body and dined in the student messhall. The same spirit which they found prevailing in the Faculty they found also reflected in the student body. The young men at Clemson seemed to them to be very much in earnest and to be satisfied that every possible effort was being put forth to conserve and to promote their welfare.

Through the courtesy of Colonel Pearson, they had the pleasure of witnessing a dress parade and learned also something of the valuable features of the military system as observed at Clemson; its usefulness in the preservation of discipline and its excellent democratizing influence, since all students are thus put, in the matter of dress, for example, on precisely the same footing and all are enabled to meet this item of expense at a minimum of cost.

A Board like this can deal, of course, only in impressions, but it is quickly obvious that Clemson is overcrowded already and that pressing needs exist now for additional accommodations. To take care of the student body during the past year it has been necessary in a good many instances to put as many as four boys in a room, and while the rooms at Clemson are large, the Board feels that it is important that an additional dormitory be provided as quickly as possible with a capacity of, say, 200 students, so as to relieve the present overcrowding and take care of additional students who cannot now be admitted for lack of room. With some diffidence the Board would suggest that such a dormitory should be built to cost approximately \$100,000, or not exceeding \$500.00 per student to be accommodated. If additional dormitory space is provided, as is urgently needed, it will be necessary to provide also additional class-room facilities to take care of these students. Another building would be needed at once, for example, in which to teach physics and other subjects and this would probably cost something like \$30,000.00. The college lacks also at the present time a gymnasium and a library building, both of which it should have. In the winter season and in bad weather there is no way now of affording a proper outlet for the healthy animal spirits of eight hundred to a thousand healthy, spirited boys. A gymnasium is not a luxury. It is a necessity. The Library at present occupies one-half of one of floors in the main building and this space with increased attendance is needed for class rooms.

Another building that is needed is one for Horticulture and Extension, and if this building were similar to the present Dairy Building, which seems to be what is indicated, the cost would probably be around \$50,000.

The Board of Visitors followed with very keen interest Dr. Riggs' illuminating account of the finances of Clemson and noted with satisfaction that the system of accounting seems to be as efficient as anything of the sort well could be, and that every penny of money which the college receives, from whatever source, is carefully expended and fully accounted for. The college plant and grounds are splendidly kept, and it is nothing less than remarkable that so much is being accomplished at such an economy of expenditure. At the

same time it is quite clear that the college can no longer depend upon the fertilizer tax for support and that hereafter the Legislature will have to provide for its financial requirements as it does for those of the other State institutions. One thing which impressed the Board especially in this connection was the fact that President Riggs in the request which he has made to the Legislature has based those requests upon the actual and insistent needs of the college. He has allowed no margin whatever for cuts, and any cut in the appropriations asked for means, not the elimination of some projected work, but the discontinuance of some activity the necessity for which has already been proved and established. The Board would earnestly commend this policy and ventures to hope that the Legislature will feel as do the members of the Board, that such a course is deserving of the fullest response from the members of that body.

Clemson occupies a place of its own in the State's educational system, the importance of which is abundantly attested by the sustained growth of the college and by the records of achievement which its alumni have made for themselves and for their alma mater. Clemson also occupies a peculiar and distinctive place in the life of the state. Over and beyond its teaching obligations, which are very heavy, it has other obligations even more extensive and not less heavy. To it as to no other institution in South Carolina, educational or otherwise, is committed the inspiring duty of conserving and developing all the state's resources and especially the agricultural resources. To it the people of South Carolina look for leadership in all these matters, nor have they looked in vain. The college has proved itself a mighty force for good. It was in the World War one of the greatest factors for quickly putting South Carolina in line with the requirements of that grave crisis. In the crisis which now confronts our people, Clemson College through her very able experts and her vigilant field workers is the agency above all others through which the cotton growers and the cotton interests of the state are expecting deliverance from the boll weevil to come and upon which they are counting for help and guidance in the revolutionary readjustments which have been made necessary in our agricultural and economic life. There is no force within the state today with larger potentialities for vitally useful service.

This Board of Visitors is convinced that those who are in charge of Clemson's destinies are fully alert to their opportunities and obligations. They believe that they will live up to these opportunities and obligations just as far as the resources at their command will admit. For the sake of the young men who are looking to Clemson to prepare them for life, for the sake of the people of South Carolina who have so much to gain from Clemson's militant leadership, it is to be hoped that the college will not lack for funds with which to press forward in well doing.

Very respectfully submitted,

OLIN SAWYER, Shairman,
ROBERT LATHAN, Secretary,
WM. GODFREY,
EUGENE S. BLEASE,
J. L. MIMS,

Report of the Extension Service

Dr. W. M. Riggs, President, Clemson Agricultural College,
Clemson College, South Carolina.

Dear Dr. Riggs:

I am submitting the report of the Extension Service for the fiscal year ending June 30, 1923.

I have always felt that the Extension Service has a duty to perform to the people other than acting as the mouthpiece to carry the information of the Experiment Station and the United States Department of Agriculture to the farmers of the state. It has seemed to me it should be the lookout in the watch tower and take the lead in bringing to the attention of the state the necessity for any readjustment in the agricultural and economic life of the people.

Realizing last winter that the time had arrived when a readjustment of these conditions should be thoroughly considered, as was evident by the migration of large numbers of negro laborers to the North, white tenants to the cotton mills, the rapid decline in the value of farm lands, the failure of financial institutions, such as large insurance companies, to accept farm lands as security for loans, the great number of mortgages being foreclosed on farms on each sales day, the number of farmers who were unable to meet their annual payments on mortgages, and further realizing that cotton growing, once the source of sure income, had become extremely hazardous and that the weevil had put many cotton growers entirely out of the business, that it had increased the risk and cost for all, that a new order of cotton grower was demanded, for cotton had become a highly specialized crop, that new materials, greater labor, and higher managerial ability were necessary to the growing of cotton, that the selling price that would have seemed fabulous before 1917 was absolutely necessary, if the southeastern farmer was to continue in the business, the Extension Service called a conference at the Jefferson Hotel in Columbia, of representative citizens, of a number of organizations and prominent farmers, to discuss the existing agricultural and economic conditions. After a thorough discussion, the conference determined that the best method of establishing our agriculture was the development of some means by which the 38,000 white tenants could become land owners, and the owners of large estates could be assisted in disposing of their holdings, and the introduction of settlers who had been trained and are accustomed to an intensive, diversified system of agriculture. In order to accomplish this, the conference requested the legislature to empower the Governor to appoint a commission to visit certain western states that had been engaged in land settlement and colonization, to

investigate these questions and to recommend to the Governor such action as in its judgment it thought wise. The commission has made its investigation and will, within the next few days, make its recommendations. I have every confidence that if the recommendations of the commission were enacted into law that South Carolina has laid the foundation for the greatest development of any state in the South. I do not think I can be charged with a want of proper modesty when I claim that the Extension Service played a large part in this far reaching and progressive movement.

The Extension Service, for the past twelve months, has been devoting a great deal of time and attention to the problem of marketing farm products. Among the outstanding accomplishments along this line was the establishment, in co-operation with the Bureau of Markets, of shipping point inspection, under the recent Federal Act for such inspection. There was shipped out of Charleston in two weeks time 1080 cars of Irish potatoes, inspected and certified to by our marketing agents. Of this large number, there were only two cars about which there was any controversy and the inspectors at the terminal points sustained the position of our marketing agents. The shippers at Charleston were so much pleased that the shippers at Beaufort requested the service, which was given them with equal success. For this next season, the shippers who ship not only potatoes but cabbage, lettuce, and melons have requested this service also. It is a matter of brief period when all of the perishable products of South Carolina will be shipped under this inspection act. With shipping point inspection by the Extension forces and terminal inspection at the large markets by Federal forces, the shippers are absolutely protected. It is gratifying to mention that Mr. Wells A. Sherman, who has charge of this line of work in the Bureau of Markets, stated that the co-operation and the efficient service rendered by the Extension Service of South Carolina were the most satisfactory of any state in the Union.

We have just begun to develop the marketing of poultry in car lots, which has been satisfactorially undertaken.

There is a new line of work that the Extension Service has been developing with the melon growers in the Savannah Valley section of the state. The growers have been losing yearly large sums on account of some pathological trouble; and in order to help them against further loss, we have established several spraying demonstrations under the supervision of Dr. Moore, the Extension Pathologist. That you may understand the success of this work, I am quoting from a letter of Mr. Herrman Brown, one of the largest growers in the state: "I think 80 percent of the cucumbers, cantaloupes, and watermelons in this section next year will be sprayed, and 100 percent should be." Also, quoting from a letter from Mr. J. M. Farrell, a large grower: "I am pleased to tell you that had not Mr. Moore made the spraying tests on the cucumbers and cantaloupes,

I would have been obliged to give up the planting of these two crops. I have heard a number of the best farmers say they would never again plant these crops without spraying."

There is a greater interest than ever in dairying. The nine creameries established are prospering, and the output of butter constantly increasing.

Unusual interest is manifested in our horticultural work. There are over 6,000 acres devoted to commercial fruit growing. The growers are well organized and will ship their fruit through the Georgia and North Carolina fruit exchanges.

A great interest has been developed in sheep raising, as a number of flocks have been purchased and brought into the state. If they can be kept free from disease, it will be a profitable phase of animal husbandry.

Never in the history of Extension work has there been such interest in the establishment of pastures and the growing of forage crops. A great number of valuable pastures have been established by the use of carpet grass. We were wise indeed in appointing a specialist to introduce the growth of soybeans and peanuts as market crops. Hundreds of farmers over the state are growing these crops profitably. I predict that within a few years soybeans will have replaced the old and reliable cowpea as a forage and hay crop. We have now one of the largest producers of soybeans in this country.

The poultry industry is growing by leaps and bounds. It will be a short while before we require two specialists to render the necessary service.

The Boys' Club Work has been exceedingly well managed this year. Messrs. Williams and Lewis have shown great enthusiasm and have been exceedingly energetic in developing same. At no time in its history has the work been so popular with the people as it is to-day. Our membership has increased 100 percent—there now being between 3600 and 4000 boys in our clubs.

While we have had many changes in the county agents' force, owing to the larger salaries offered by North Carolina for county agents, we have been exceedingly fortunate in the men we have secured to replace them. The county agents as a whole are working successfully and efficiently. The esprit de corp of the entire Extension force is all that I can ask.

Following is a report of the work by divisions:

PROJECT NO. 1-A: ADMINISTRATION

Reports:

We have this year perfected the system of monthly reporting, which system was inaugurated just before the beginning of the year in lieu of weekly reports. The monthly reports give a concise but complete report of the activities of each county agent and specialist. They require less time to prepare and less time to read and condense into state reports than did the weekly reports.

Definite Program of Work:

For several years each agent has been required to formulate a program of work which would give him definite goals to attain and confine his activities to systematic development of the agriculture of his county. This year, however, we have been able to get the county plans of extension work on a more definite and satisfactory basis than at any time heretofore. Each county agent and each specialist has definite demonstrations to carry through the year and these demonstrations are a part of the program for agricultural development of the state. One program of agricultural work for each county includes the activities not only of the county agent, but also of all specialists who work the county. There is no conflict in the program of work in a county between different workers as all are engaged upon the same plan. The various plans of work for the counties are printed in bulletin form and are available for the information of agricultural leaders who are in a position to aid in advancing the different lines of work. To give a single illustration among hundreds available, showing how plans of work are carried out—the plan of work for Chesterfield County, formulated in January, shows under the heading of "Poultry Husbandry" that the county agent and the poultry specialist from the college will "assist with one co-operative carlot shipment of poultry." This item of work was completed about April 15.

Office Facilities:

It has seemed to us for some time one of the weakest links in the Extension system has been the lack of facilities in the way of offices, equipment, and stenographic assistance for the use of our county agents. These agents are our most direct point of contact with the people and not to equip them for efficient and full service discounts in a measure the value of the extension work to the people. Accordingly, recommendations were made to the President and the Board of Trustees at the April meeting looking toward a remedy for this situation. Since the recommendations were approved, we have entered upon a plan, which will mature in April, 1925, and will result in each county having certain office equipment and part-time stenographic assistance. To do this, it has been necessary to reduce the number of specialists, as there is no other way to provide the funds. While we regret this, we believe it is the course of wisdom.

While there has been no single outstanding development in publicity work, we believe it worthy of mention that the newspapers of the state are using more and more of our material. One rarely picks up a state or county paper now that does not carry some article emanating from the College through the Division of Publications. Sometimes these articles appear in columns conducted in county papers by the county agents with slight changes to fit into

some local development, but they all carry reliable information into most of the homes of the state and result in dispelling to an untold degree ignorance and traditional prejudice regarding the science of agriculture.

PROJECT NO. 2: PUBLICATIONS

Number and Character of Extension Publications

(July 1, 1922—June 30, 1923)

Extension Bulletins:

No. 54, "Feeding and Management of Dairy Cattle;" a 48-page publication discussing the factors influencing feeding, balancing of feeds, feeding and production, composition of feedstuffs, herd management, raising better calves, etc.

Extension Circulars:

No. 37, "The Fall Crop of Irish Potatoes;" a 4-page publication of information on soils, fertilizers, varieties, cultivation, harvesting, and disease prevention.

No. 38, "Testing Dairy Products;" a 14-page publication on testing milk, cream, and butter-fat for butter-fat and other things.

No. 39, "Crop Rotations for Piedmont Counties;" a 4-page publication giving recommendations for rotations for soil building and better yields.

No. 40, "Crop Rotations for Eastern and Southern Counties;" a 4-page publication giving recommendations for rotations for soil building and better yields.

No. 41, "South Carolina Grades for Sweet Potatoes."

No. 42, "South Carolina Grades for Irish Potatoes."

No. 43, "South Carolina Grades for Head Lettuce."

No. 44, "South Carolina Grades for Cabbage."

No. 45, "South Carolina Grades for Barreled Apples."

No. 46, "South Carolina Grades for Rough Celery."

No. 47, "South Carolina Grades for Asparagus."

No. 48, "South Carolina Grades for Strawberries."

No. 49, "South Carolina Grades for Slicing Cucumbers."

No. 50, "South Carolina Grades for Peaches."

No. 51, "South Carolina Grades for Bermuda Onions."

No. 52, "South Carolina Grades for Fresh Tomatoes."

Note: Circulars 42 and 52 inclusive give the officials grades for South Carolina for the products named.

No. 53, "Tobacco Wildfire and Blackfire;" a 12-page publication giving symptoms, causes, and control measures of these diseases. Three figures.

No. 54, "Program of Extension Work for 1923;" a 52-page publication summarizing by counties and by subject-matter divisions the work of the Extension Service as planned for 1923.

Information Cards:

No. 22, "Boll Weevil Control in 1922;" a 2-page mailing card of suggestions on fighting the boll weevil.

No. 23, "Feeding Dairy Cattle;" a 1-page poster card giving general suggestions and rations.

No. 25, "Fumigating Stored Grains;" a 2-page mailing card on fumigating with carbon bisulphide.

No. 26, "Harvesting, Handling, Storing, and Curing Sweet Potatoes;" a 1-page poster card giving directions.

No. 27, "How to Determine Boll Weevil Infestation;" a 2-page mailing card telling how to select counting areas, count squares, and calculate percentages of infestations.

Reports:

"The Agricultural Extension Service of South Carolina;" annual report for 1922 containing 40 pages and 20 figures showing the summary of work of the Extension Service for the calendar year 1922.

The Weekly News Notes:

Volume 11, Numbers 1 to 52 inclusive, ten to fifteen miscellaneous articles in each issue giving agricultural news, instruction, and propaganda.

Plans for Securing, Reviewing, and Editing Material:

(a) Material for bulletins, circulars and information cards is submitted by division chiefs after discussion between them and the agricultural editor as to the needs for such material. Initial preparation is often done by the Extension Specialists or other members of the division concerned. The material is analyzed by the editor to ascertain that it meets the needs, and is then edited to the extent of considerable rewriting to secure simple and popular appeal. Illustrations are secured when possible to make publications more attractive and more instructive.

(b) Material for the Weekly News Notes, the News Letter, and special articles is secured by interviews with specialists, division chiefs, county agents, and other workers, and partly by means of a weekly conference with the division chiefs and specialists, at which the agricultural editor discusses with the members of the various divisions the matter of timely news and instructional material. Considerable good material is searched out of county agents' reports.

Methods Used in Distribution:

(a) Bulletins, circulars, and information cards are distributed (1) by classified mailing lists, (2) by news articles announcing a new publication of timeliness or an old one. (3) through county agents, specialists, banks, etc.

(b) The plate material issued is distributed free to such newspapers as answer the agricultural editor's announcement that such material is being prepared and offered for their use. It goes

chiefly to the smaller county newspapers whose facilities for setting type are not so good.

(c) The mimeographed News Letters are mailed direct to the newspapers and to the county agents. In this way the newspapers may use the letters of their own accord or the county agents who edit farm sections for the papers may work the material into their pages. The News Letters are sometimes sent on the zone principal to those papers most likely to use them because of local interest or other special consideration.

(d) The Weekly News Notes, intended primarily as a "clip sheet" for newspapers, is mailed to all newspapers of the state, county agents, and specialists, legislators, bankers, about 1200 farmers, and to agricultural workers out of the state who ask for it.

How the Mailing List is Organized and Revised:

The mailing list is made up of classes of names, including newspapers, farmers, agricultural workers, banks, state legislators, etc. Revision is now being made for strict classification, so that farmers will get only publications on such subjects as they indicate a desire for. New names are added constantly upon direct requests from individuals or indirectly through requests from county agents and specialists. "Dead" names are constantly taken off on failure of postoffice to deliver or failure to receive replies to our requests.

PROJECT NO. 3: COUNTY AGENTS

Funds for supporting county agent work come from the United States Department of Agriculture, the State, and counties. We have no farmers' organization in this state comparable with the Farm Bureau in so far as providing funds for county agent work is concerned. There are in a number of counties, however, local organizations, mostly informal in character and most of which charge no membership fee, that are of great assistance to the Extension Service agents in the conducting of Extension work. We are trying in every way possible to encourage the idea of establishing definite demonstrations in production and marketing, and as quickly as possible to eliminate the personal service features from Extension work. It is realized that it is almost impossible to prevent some personal service work being done, but this is minimized as much as possible and agents are encouraged to regard their work as primarily educational.

County agent work on the whole has been conducted on a satisfactory basis this year. There are one or two disturbing factors that are causing some concern. The first is the fact that at the last session of the legislature, six counties failed to provide any county funds for county agent work. During last year, there were two such counties. Those failing to make provision for county agent work this year are—Williamsburg, Horry, Edgefield, Saluda,

Jasper, and Bamberg. One or two other counties made such small appropriations that it is almost impossible to supply them with trained, experienced, efficient agents.

Another matter that is giving us some concern is the rapid turn-over in our county agents personnel. In addition to the usual causes of county agents resignations, such as going into other lines of business, failure of adequate appropriations, we have lost six agents to North Carolina and Alabama, because those states could pay much higher salaries than are available in this state at present. In a number of other cases we had difficulty in retaining men to whom higher offers were made. While we hope this condition is temporary due, perhaps, to the fact that this state, more than any other, is passing through a period of boll weevil depression, we are giving this matter thorough study in order to protect the interests of South Carolina as far as possible.

As an offset to the above, we are glad to say that extension work in many of our counties seems to be more firmly intrenched in the hearts of the people than ever. Sumter County, without any solicitation on our part, provided \$3,400 more than heretofore in order to provide salary and travel expense for another first class agent.

With programs of work more definite than heretofore some office facilities and stenographic assistance being provided, we confidently expect that we shall soon enter on an era of increased efficiency in our county agent work.

Statistics, County Agents' Work

| | |
|--|--------------|
| No. of community farmers' clubs county agents assisted in organizing this year | 80 |
| Membership | 279 |
| Community farmers' clubs already in state | 149 |
| Membership | 5,809 |
| No. farmers' organizations that buy and sell co-operatively | 125 |
| Value of commodities bought and sold with help of county agents | \$665,767.00 |
| Saving | 69,968.00 |
| County agents maintaining bulletin boards | 20 |

Table 1.—Farm Crop Demonstrations

| Kind | Number | Acreage |
|----------------|--------|---------|
| Corn | 984 | 27,543 |
| Cotton | 1,090 | 17,918 |
| Tobacco | 34 | 183 |
| Tomatoes | 15 | 44 |
| Oats | 602 | 7,725 |
| Rye | 618 | 51,102 |

| | | | |
|--------------------------------------|--------|---------|---------|
| Wheat | 853 | 3,252 | |
| Barley | 50 | 275 | |
| Alfalfa | 309 | 1,255 | |
| Crimson Clover | 723 | 7,456 | |
| Oats or Rye with Vetch | 671 | 5,935 | |
| Misc. Hay and Forage Crops | | | |
| Clover, Grasses | 920 | 11,228 | |
| Velvet Beans | 1,773 | 25,918 | |
| Saybeans | 316 | 2,571 | |
| Cowpeas | 879 | 12,564 | |
| Peanuts | 309 | 2,184 | |
| Irish Potatoes | 212 | 2,017 | |
| Sweet Potatoes | 886 | 4,646 | |
| Orchards, Home | 1,297 | 50,420 | (trees) |
| Orchards, Commercial | 140 | 573,131 | (trees) |
| Fertilizers | 431 | 4,943 | |
| Lime | 367 | 2,207 | |
| Drainage Tile and Ditch | 103 | 8,587 | |
| Terracing | 619 | 24,156 | |
| Varous Crops with Negro Farmers..... | 254 | 4,256 | |
| Total | 14,445 | 181,965 | |

Table 2.—Livestock Demonstrations

Dairying

| | |
|---|-----|
| No. registered bulls introduced | 139 |
| No. registered cows and heifers introduced | 461 |
| No. high grade dairy cows | 758 |
| No. farmers instructed how to feed balanced rations to milk cows | 547 |
| No. demonstrations in dairy work | 185 |
| Cream routes established | 17 |
| Bull associations established | 4 |
| No. cows kept by members of these associations..... | 884 |
| Total number of bull associations in state | 23 |

Beef Cattle

| | |
|---|-----|
| No. registered bulls introduced | 40 |
| No. registered cows or heifers introduced | 60 |
| No. high grade cows or heifers introduced | 180 |
| No. feeding cattle brought in | 673 |
| Beef feeding demonstrations | 19 |

Hogs

| | |
|---|-------|
| No. registered boars introduced | 569 |
| No. registered sows or gilts introduced | 1,946 |
| No. purebred hogs sold for farmers | 2,520 |
| No. purebred herds started | 161 |
| No. farmers taught to use self-feeders | 64 |
| No. farmers given assistance in growing grazing crops | 1,182 |

Sheep

| | |
|--------------------------------------|----|
| No. registered rams introduced | 13 |
| No. registered ewes introduced | 46 |
| No. grade ewes introduced | 88 |

Poultry

| | |
|--|-----|
| No. poultry demonstrations | 91 |
| No. communities that have adopted standard variety of poultry | 27 |
| No. farmers assisted to grow standard-bred poultry | 184 |
| No. new poultry houses erected | 88 |

Livestock Diseases and Pests

| | |
|---|--------|
| No. cattle treated by agents for blackleg | 1,937 |
| No. hogs treated by agents for cholera | 13,459 |

**Table 3.—Farm and Farmstead Improvements Made with
Agents' Assistance and Advice**

| | |
|---|--------|
| Buildings erected (dwelling and other) | 556 |
| Buildings improved (dwelling and other) | 385 |
| Home and farm water systems installed | 62 |
| Home and farm lighting systems installed | 80 |
| Home grounds improved | 716 |
| Home and farm sanitary conditions improved | 542 |
| Farmers adopting systematic crop rotations | 3,803 |
| Acreage of new pastures established | 701 |
| Farmers seeding cover crops to turn under | 10,559 |
| Pieces of farm machinery, implements and small tools purchased | 10,787 |

Table 4.—Miscellaneous Facts about County Agents Work

| | |
|--|---------|
| Visits by agents: to farmers | 21,595 |
| To business men | 5,241 |
| To boys' club members | 2,047 |
| Total | 28,883 |
| Miles traveled on official business | 379,557 |
| Calls on agents at office and home relative to work: | |
| personal | 31,949 |
| telephone | 17,207 |
| Meeting held under auspices of agents of Extension Service | 2,293 |
| Attendance at these meetings | 124,936 |
| Meetings held at demonstrations in the field | 490 |
| Attendance at these meetings | 12,471 |
| Average percentage of time spent in correspondence and other | |
| office work | 25 |
| in field work | 75 |
| Letters written by county agents | 31,709 |
| Articles prepared and published on timely subjects | 1,984 |

| | |
|--|---------|
| Circular letters prepared | 551 |
| Copies of these letters mailed | 125,085 |
| State and government bulletins distributed | 40,738 |
| Visits by specialists to counties | 1,421 |
| County fairs assisted by agents | 22 |
| Farm account books distributed | 209 |
| Farmers given assistance in keeping cost production records..... | 173 |
| Farmers practicing fall plowing as result of agents' work | 17,797 |
| Demonstrations in better methods of beekeeping | 385 |
| Hives involved | 2,081 |

Table 5.—Seed Improvement Work

| | Improved seed secured | | Improved seed offer- ed for sale. | |
|---------------------------|--------------------------|-----------|--------------------------------------|-------------|
| | Farms | Bushels | Farms | Bushels |
| Corn | 396 | 1,595 | 67 | 7,210 |
| Wheat | 1,699 | 8,365 | 49 | 1,616 |
| Rye | 598 | 3,902 | 225 | 17,310 |
| Cotton | 696 | 14,069 | 188 | 28,373 |
| Oats | 1,339 | 12,515 | 246 | 52,975 |
| Potatoes: sweet and Irish | 367 | 4,947 | 353 | 25,405 |
| Tobacco | 106 | 161 (oz.) | 37 | 3,400 (oz.) |
| Other | 401 | 3,505 | 343 | 14,268 |

During the summer of 1923, there were organized about twenty-five automobile tours for the purpose of visiting the boll weevil laboratory at Florence. In this way hundreds of farmers from all parts of the state had an opportunity to see what is being done at the boll weevil station. Most of these parties of farmers stopped at other places along the way for visits to successful farm undertakings of various kinds. In addition to these tours to Florence, quite a number of other automobile tours were made, some within the counties and some outside the state. For instance, parties from three counties were carried to the apple and peach orchards near Cornelia, Georgia, for the purpose of familiarizing our farmers with the commercial production of these crops. These automobile tours are becoming a regular part of our extension work and are made possible because of the good roads being developed and the wide spread use of automobiles by farmers. Of course, it is usually only the leading class of farmers that take these trips.

PROJECT NO. 4: HOME DEMONSTRATION

A complete report of home demonstration work has been prepared and published by the home demonstration office located at Winthrop College, Rock Hill, S. C., and may be had upon application. This report shows a very satisfactory year's work. It will be seen that the home demonstration work is an exceedingly important part of the

Extension Service program in South Carolina. The plans inaugurated some years ago for providing an income for the farm women have gradually developed until we believe that our curb markets and our womens' organization known as the South Carolina Home Producers Association are doing an outstanding peice of work for the women on the farms of this state. It is believed that it will be more satisfactory for the reader to secure a copy of the separate report than to summarize the results of home demonstration work here.

PROJECT NO. 5: NEGRO DEMONSTRATION

Three counties are now making small appropriations for the salaries of negro agents. The negro work is on a better and more systematic basis than heretofore and we feel that it is of more service to the state than it has ever been. It is an infleuence in the right direction in the matter of negro migration to Northern industrial centers.

Among important demonstrations supervised by our local agents should be mentioned their work in growing cotton under boll weevil conditions in Orangeburg and Richland Counties. As a result of this work the local agents make the following statements in connection with these demonstrations.

"S. M. Glover and co-operators around him are thoroughly convinced that cotton can be made under boll weevil conditions. The same is true of demonstrator J. H. Williams and co-operators living near him in Orangeburg County."

"D. H. Thomas, of Richland County, on two and one-half acres made over three thousand pounds of seed cotton. isaac O'Neill of Richland County, on 8 acres made 7,650 pounds of seed cotton. On one side adjoining this farm was a field of cotton of ten acres which was not poisoned at all but squares were picked up about every two weeks, and made 2,400 pounds of seed cotton."

A number of other demônstrations in growing cotton under weevil conditions were supervised by local agents and these, together with demonstrations being conducted under supervision of white agents are serving a most useful purpose of pointing out the essential known facts regarding boll weevil control. Altogether there were fifty-four demonstrations in cotton supervised by local agents with a total of 306 acres.

The following shows the number of demonstrations in crops supervised by local agents:

| Crop | No. Demonstrations | Acreage. |
|----------------------------|--------------------|----------|
| Cotton | 54 | 306 |
| Corn | 91 | 584 |
| Wheat | 80 | 537 |
| Hay and forage crops | 69 | 884 |
| Irish Potatoes | 14 | 32 |
| Sweet Potatoes | 96 | 164 |

In addition to these, the agents conducted demonstrations in orchard work, dairying, livestock, boys' club work, etc.

Two new agents have been added during the year, making a total of nine agents now employed in this project.

PROJECT NO. 6: LIVESTOCK

The important lines of livestock extension work include substitution of pure bred sires for scrubs, the production of feed, forage crops, and grazing crops, the better development of livestock through balanced feeds, the use of more and better fences than heretofore, and the marketing of surplus livestock. Three men have been engaged full-time as specialists. During the crop year ending January 1, 1923, forty pure bred bulls were placed and 60 pure bred cows; 569 pure bred boars and 1946 pure bred sows were placed. Hundreds of scrubs were eliminated. Nineteen feeding demonstrations with steers and 76 with swine were supervised, 256 forage crop demonstrations for swine were completed. Several hundred car loads of hogs and cattle were shipped co-operatively to Richmond and Jersey City. One great drawback to the livestock industry in those coastal counties not yet entirely free of the cattle tick has been the quarantine operated against these states by the States of Virginia and Maryland, under which cattle from these counties cannot be marketed at Richmond and Baltimore, our usual markets. This quarantine is working a great hardship against our best farmers in these counties inasmuch as they are prevented from shipping even though their own premises are clean and their cattle certified as free of ticks by the State Veterinarian.

PROJECT NO. 7: DAIRYING

There has been quite a revival of interest in the dairy cow during this year. This is due to the poor crops of cotton produced recently and the relatively small income from that source. Inasmuch as whole milk and sweet cream markets in this state are very limited, any development of the dairy business must be on the basis of selling butter fat to creameries to be manufactured into butter. It is upon this basis that the keeping of cows is being increased by the farmers. In many sections of the state, there is a tendency for creameries to increase faster than is necessary and we feel that our work along dairy lines has been of some service in postponing the investment of money in creameries at times when there was little hope for these plants to succeed. We have not been successful in every case in postponing the organization of creamery corporations and a few of our creameries are in difficulties because of the small volume of business they transact. There is more hope now, however, for these creameries to succeed than there has been at any time heretofore. Our experience indicates that it requires from 600 to 1,000 cows from which milk is sold to enable a creamery to operate on a fairly successful basis. This number of surplus cows is not found in

any one community in the state, consequently our creameries have been forced to organize collection routes and encourage shipments of cream from distant points. We hope eventually to develop the communities immediately surrounding the creameries to the point where these communities alone will support the creameries.

There are two great outstanding problems in connection with making the business of butter fat production profitable: First, the economic home production of all feed stuffs required. This means that we must have more fertile soils, so as to get larger yields per acre. Second, the improvement of our native cattle, so that larger yields per cow may be obtained.

PROJECT NO. 8: AGRONOMY

Crop values in South Carolina represent by far the greater part of the agricultural income. Therefore, the problems connected with soil fertility, improved seed and other matters which bear on larger acreage production, are the most important production problems in the agriculture of the state.

The most important problems along agromomy lines to which we have devoted much time are soil building, seed improvement, pasture improvement and the production and handling of new cash crops. These are named in the order of importance.

Soil Improvement Work.

Especially under boll weevil conditions is soil improvement essential. We recognize that cottor can be grown as a money crop and will continue to be grown; however, the acreage is being greatly reduced and it is very necessary to the prosperity of our farmers that every effort be made to secure large acreage yields. Any program of boll weevil by the use of poison that is profitable must be carried out on high yielding land. Moreover, when we come to producing crops other than cotton as a surplus to be put on the market, unless we have high yielding land, we find that we cannot compete in the production of these crops with other parts of the country where such crops are being grown. During the year we have had Mr. N. E. Winters for eight months as specialist in soil fertility. Mr. Winters made fifty-one visits to counties, addressed eighty-three meetings having a total attendance of 8,414. He prepared twenty-five charts to teach lessons in soil fertility, issued twelve press articles and wrote three bulletins. Mr. Winters' work has been very effective in bringing to the attention of the farmers in the state the prime importance of building up their soils. Mr. Winters resigned in the early spring to take charge of the boll weevil laboratory at Florence.

Seed Improvement Work:

Special attention is called to the facts under "Statistics. County Agents Work" referring to seed improvement.

There is no question of the great value of the work already done along this line. For instance, we have advocated improved Cleveland Big Boll as a short staple variety of cotton best adapted to this state, except on wilt infested land, where Dixie Triumph should be used. As long staple varieties we have advocated Weber 49 and Delta Type Webber. The table given below shows that these varieties have largely superseded other varieties, except King, which is still grown because it begins to fruit early. This table is compiled from the questionnaires sent out to county agents. The figures represent percentage of total acreage in cotton in each county.

| COUNTY | Cleveland | Dixie Triumph | Delta-Type | Weber 49 | Light. Express | Cook | Half and Half | King | Simpkins | Sawyer | Mex. Big Boll | Rowden | Stoney | Tool | Dixie | Meade | Lincolnton | College No. 1. |
|------------------|-----------|---------------|------------|----------|----------------|------|---------------|------|----------|--------|---------------|--------|--------|------|-------|-------|------------|----------------|
| Abbeville . . . | 70 | | 5 | 5 | | | | | | | | | | | | | | |
| Anderson . . . | 50 | 1 | | | | 5 | | 5 | | 1 | | 5 | | | | | 1 | |
| Bamberg . . . | 75 | | | 2 | | 2 | | 2 | | | | | | 2 | 15 | | | 1 |
| Barnwell . . . | 50 | 20 | | | | | 5 | 5 | | | | | | 10 | | | | |
| Charleston . . . | | | | | | | | | | | | | | | | 35 | | |
| Cherokee . . . | 75 | | | 5 | | | | 10 | 2 | | 3 | 5 | | | | | | |
| Chester . . . | 95 | | 1 | 1 | | | | 1 | | | | | | | | | | |
| Chesterfield . . | 65 | | 17 | 15 | 3 | | | 1 | 1 | | | 1 | | 1 | | | | 1 |
| Colleton . . . | 15 | 1/2 | | | | 5 | | 10 | | | | | | | | | | 69 1/2 |
| Dillon . . . | 87 1/2 | 3 | 3 | 3 | 3 | | | 1 | | | | | | | | | | |
| Dorchester . . . | 75 | | | | 5 | | | 15 | | | | | | | | | | 5 |
| Fairfield . . . | 75 | | 2 | 10 | 2 | | | 3 | | | | | | | | | | 7 |
| Florence . . . | 60 | 10 | 10 | 15 | | | | 5 | | | | | | | | | | |
| Georgetown . . | 95 | | | | | | | 25 | | | | | | | | | | |
| Greenville . . . | 80 | | | | | | | 10 | | | | | | | | | | |
| Horry . . . | 50 | | | 5 | | 10 | | 5 | 5 | | | | | | | | | |
| Lancaster . . . | 25 | | 10 | 15 | | | | | | 10 | 20 | | | | | | | 20 |
| Laurens . . . | 85 | | 1/2 | | | 5 | | 1 | | | | | | | | | | 7 1/2 |
| Lexington . . . | 40 | | 10 | | | 10 | 10 | 10 | | | | | | | | | | |
| McCormick . . . | 60 | | 5 | | | | | 5 | | 20 | | | | | | | | 10 |
| Newberry . . . | 80 | | | 2 | | | | 5 | | | | | | | | | | 13 |
| Orangeburg . . | 80 | 3 | 4 | 4 | 4 | | | 4 | | | | | 4 | | | | | |
| Pickens . . . | 90 | | | | | | | 2 | | | | | | | | | | 15 |
| Richland . . . | 75 | | 3 | 4 | 2 | | | 3 | 1 | | | | 2 | 1 | 6 | | | 3 |
| Saluda . . . | 70 | | 1 | 4 | 1 | 5 | 2 | 2 | | 15 | | | | | | | | |
| Spartanburg . . | 95 | 1/2 | | 1 | | | | 1/2 | 1/2 | | | | | | | | | |
| Williamsburg . . | 95 | | | | 1/2 | | 1/2 | 1 | 2 | | | | | | | | | 1 |
| York . . . | 55 | | | 2 | | 10 | | 10 | | | 2 | 5 | | | | | | 20 |

Pasture Improvement Work:

We have one man employed as a specialist in pastures and forage crops who has given his entire time to promoting demonstrations in every section of the state. These demonstrations were very successful in 1922 and hundreds of acres were seeded in the spring of 1923 to such grasses as carpet grass, lespedza, dallas grass, bermuda, and white Dutch Clover.

Production and Handling of New Cash Crops:

Under boll weevil conditions our farmers are attempting to grow as cash crops, new cropstc.....MBo0 o7890\$ 7890\$..... ETAOINNIOO scale for home use. Among the most important of these crops are soy beans, cowpeas, and peanuts. In July of this year we employed a specialist to instruct our farmers and county agents in the growing and handling of these crops as cash crops. There is quite a demand for the services of this specialist, and many demonstrations are under way.

PROJECT NO. 9: HORTICULTURE

Horticultural work has developed along two distinct lines, viz., fruits and vegetables. The fruit development has taken place in the sandhills and Piedmont and vegetable production in the southern and Pee Dee sections. The problems of production and marketing many new crops have been acute and our specialists and county agents have exerted every effort to meet the trying conditions and be of service. So rapid has been the development of new vegetables and fruit crops for the market that we shipped out of South Carolina last year (1922) a total of 14,000 car loads of these crops; a record not heretofore approached.

Scores of new orchards have been put out this fall and will be put out this winter in these sections, and many thousands of young peach trees have been purchased co-operatively with the assistance and advice of county agents and specialists. The variety most commonly being planted is the Elberta.

"Orchard Week:"

One of the most effective means of reaching people in connection with orchard work has been through the inauguration of "Orchard Week" and the organization of orchard clubs. "Orchard Week" is widely advertised in a county and additional agent from an adjoining county is brought in, who, together with specialists, assists the county agent in holding meetings and demonstrations in every section. The local newspapers co-operate, and people are given as much information as possible regarding orchard development. Some remarkable results have been secured through this intensive method of conducting extension work. An orchard club is a small number ranging from ten to forty farmers who join together for the purpose of employing some well trained boy or man to prune and spray their orchards. Of course, this system applies only to the owners of home orchards who do not feel like purchasing spray outfits for a small orchard, but are willing to employ some one to do this work regularly at so much per tree or so much per hour.

Truck Crops:

In connection with our extension work in the growing of vegetables and special crops, our agents successfully demonstrated that onions

can be grown commercially in the vicinity of Sumter, Florence, Darlington, and Dillon. The Australian Brown is the best variety for growing mature onions and the Bermuda and Egyptian varieties seem to be the best for green or bunching onions.

Most of the truck planted in South Carolina this year was marketed at a loss, if it found a market at all. The railway strike, coupled with freight rates and the scarcity of cars, accounts in a measure for this condition. It appears that fall trucking may be more profitable than late spring and summer trucking, especially in the production of string beans, Irish potatoes, tomatoes and cucumbers.

Quite a large acreage in Lucretia dewberries has been set in the sandhills of Chesterfield County. In some parts of the state blueberries are being grown in a limited way.

PROJECT NO.10: POULTRY

One notable achievement has been to start for the first time shipments of car loads of poultry from the state. The first carload moved from Chesterfield County on April 17, and consisted of 18,230 pounds of poultry, which netted \$3,642.56 to the 381 people who made up the shipment. Since that time other cars have been shipped and the shipping of poultry in carlots is likely to become a common occurrence in the future. The first carlot shipment was a part of our annual plans of extension work formulated early in the year. Thus are new industries established.

In many communities there is being produced a surplus of eggs or chickens for market. The following paragraphs extracted from the report of the specialist indicate the lines of extension work being conducted and the status of this work at the present time.

Standard-Bred Poultry:

This work can be briefly summarized by stating that purebred poultry has been placed on 20 percent of the farms. This means that mongrels were disposed of and purebred poultry introduced, and does not mean that there were 20 percent of new poultry raisers entering the business. We have no statistical figures denoting the amount of increase during the year 1922, but it can be safely stated that all the breeders in this state sold all their available stock.

County Poultry Associations:

There were seven country poultry associations organized in this state at the end of the crop year 1922. These organizations meet each month and carry on the work to a great degree of efficiency. Through these organizations it is possible to keep up greater interest in the work.

State Poultry Association:

The South Carolina Poultry Breeders' Association was organized in 1916 for the purpose of promoting the breeding of better poultry. One thing that the association has done for the people is obtaining

for them discounts on various poultry supplies. Hundreds of dollars have been saved the members.

Culling:

Culling demonstrations were conducted during the months of July to October. Twenty-five demonstrations held in various sections of the state were well attended. Besides the demonstrations given, innumerable flocks were culled from time to time.

Miscellaneous:

One of the main phases of this project is commercial poultry. There were in this state on January 1st, 20 men in commercial egg production, the majority of same being started in 1921 and 1922. The sizes of the flocks range from 200 to 2500 layers.

PROJECT NO 11: MARKETING

Marketing consists of giving due and proper attention to:

- (1) Grading, standardization, and packing.
- (2) Methods of assembling and concentrating the product in carlots.
- (3) Warehousing and cold storage.
- (4) Financing various operations in the transfer of products from farm to consumer.
- (5) Transportation and freight rates.
- (6) Routing shipments.
- (7) Salesmanship and service.
- (8) Distribution to individual consumers.

It is evident, therefore, that the problems we meet in assisting our farmers to bring about efficient and profitable marketing involves quite as much technical skill and knowledge as do the various production problems. We have been instrumental in bringing into existence organizations of producers for the purpose of solving many marketing problems, for it is only through combined effort that producers can carry out some of the steps in marketing listed above. A total of 230 carloads of sweet potatoes were shipped out of the state this year by the South Carolina Sweet Potato Association, all of which were graded and standardized by our market specialists, thus making it possible for those potatoes to be marketed by the Association management on a strict quality basis. If it were possible to apply grading and other efficient methods to each of the 14,000 carloads of truck and fruit crops shipped from the state last year, this state would soon rank among the best as a producing area for such crops. We firmly believe that although we cannot reach as much of this work as we would like, that what we are doing is working a revolution in the truck and fruit industries.

One of the most important lines of marketing work undertaken has been the shipping point inspection of truck crops. Under this system, truck crops are inspected by agents employed jointly by the United States Department of Agriculture and the state. These inspectors certify as to the grade and condition of crops as loaded.

The certificate so issued is accepted as prima facie evidence in case a dispute arises between shipper and buyer as to the grade of a product. This has been the means of saving the growers much worry as well as money in marketing their truck crops. We are planning to extend this service next season to as many of our truck crops as possible. This line of work has been greatly appreciated by the truck growers around Charleston and Beaufort.

Under authority of state law, our marketing division is charged with responsibility of fixing grades and standards for truck and fruit crops and under this law grades have been fixed for eleven different crops: slicing cucumbers, fresh tomatoes, asparagus, Bermuda onions, other varieties of onions, apples, Irish potatoes, cabbage, head lettuce, peaches and strawberries. The state grades are in every case the same as the grades fixed by the United States Department of Agriculture. This is a great convenience inasmuch as the grades of our products are understood on any market in the country to which they may be sent.

PROJECT NO. 12: ENTOMOLOGY

The extension work in entomology has largely consisted of meeting demands in connection with boll weevil damage and of work in beekeeping. There has been some panic among our people and some grasping at straws in an effort to find a remedy for the boll weevil. The Government method of dusting with calcium arsenate, using special machinery, has certain drawbacks, among which are three of importance, viz: the cost of the method is rather high; the necessary investment in machinery is large; and the times when dust may be successfully applied are limited. In spite of these recognized drawbacks, this method is the only promising one we have advocated. Others have advocated and promulgated every conceivable form of fake or fancy including many types of traps, poison mixtures, and half-baked ideas of control. We are having the same experience that has racked each of the other boll weevil states in turn during the most acute period of boll weevil depression. However, there have been some who sincerely differed with us in the use of the dusting method, men who have nothing to sell and who desire to bring about the use of the best method of control, notable among these is Mr. D. R. Coker. His influence and opinion will cause a great many farmers to use sweetened poisons this year. We await with every desire, but very little hope that this may prove to be a more economical and more efficient method than dusting. In the meantime, the dusting method is being improved, the machinery made more economical, and we can no longer doubt that in intelligent hands, it will prove of service.

Beekeeping:

During the year the bee specialist assisted in securing from reput-

able queen breeders 8,000 queens: In public demonstrations he transposed over 300 colonies of bees from old fashioned box hives to modern standard frame hives. There are at present twenty packing demonstrations in the state showing how bees may be protected during the winter. This brings the colonies with a large number of workers available for the early spring honey flow, which is the most important of all in this state.

Another phase of beekeeping work which has been demonstrated is the marketing of worker bees. Over 2,000 pounds of bees were shipped during the year to northern markets. The average production per colony of bees has been greatly increased in demonstration yards during the past season. Some of these demonstrations averaged one hundred pounds per colony. A total of 127 demonstrations were conducted in thirty-three counties.

PROJECT NO. 13: PLANT DISEASES

Aside from the emergency extension work done on a part time basis by Professor Barre, no regular work was included in our plans until May 1, 1923, when a full time field worker was employed in the person of Dr. W. D. Moore. Dr. Moore began his work by supervising demonstrations in disease control in watermelons, cantaloupes, and other commercially grown truck crops in the lower part of the state.

The disease most common and most destructive in these crops is anthracnose and Dr. Moore's work in connection with the control of this disease has been most successful. A great many demonstrations were arranged, in Barnwell, Hampton, Allendale, and Charleston Counties. The following is quoted from a letter received by this office from Mr. J. M. Farrall, of Blackville and shows the attitude of those who had an opportunity to observe the effects of this control work:

"I am pleased to tell you that had not Mr. Moore made the spraying test on the cucumber and cantaloupe vines here this year I would have been obliged to give up the planting of these two crops. The proof was conclusive. I have heard a number of the best farmers say that they will never again plant cantaloupes, cucumbers, and watermelons unless they spray all three crops. I am sure I will not.

If you had not done the spraying here, we would likely be shipping in hay, as our hay crops are made mostly in the cantaloupe and watermelon fields. I know of no work ever done here for the farmer that cost so little and gave so much promise of good as the spraying of the cucumbers and cantaloupes. I saw none of the spraying of the watermelons, but understand we will get just as good results by spraying them."

We are planning to encourage the widespread use of spraying next season in the control of this disease. The importance of this work in the above mentioned counties can be realized when we remember that Barnwell County alone ships annually about 75 cars of asparagus; 250 cars of cucumbers; 200 cars of cantaloupes; and 600 cars of watermelons.

PROJECT NO. 14: BOYS' CLUB WORK

There was enrolled in the state a total membership of 1,594 boys in club work. The demonstrations carried on by the club members included corn, cotton, pigs, calves, peanuts, Irish potatoes, bees and a few others classified as miscellaneous. The financial returns from these products, as indicated in the tables of this report, do not represent the most beneficial results of club work. These serve only as a means to an end. The real objective in mind is to reach the boy at an important age of his life and help make impressions on his mind that will shape to some extent his attitude toward progressive rural life.

Organized Clubs:

Practically all club work is now being done through organized clubs. The clubs are organized by communities with all members meeting once a month, under the leadership of their own officers, elected by club members. The county agent meets with the members in these meetings and a program is carried out consisting of two parts, the first instructional and informational, the second social and recreational.

"The Carolina Club Boy"

The Carolina Club Boy, a monthly paper, was issued from Clemson College by the state club force. This paper was started in July, 1922 and went to every club boy in the state each month thereafter. It has furnished a fine opportunity to get ideas and valuable information to the club members.

The annual dinner in honor of the state prize winners for 1922 was held in Greenville in May, 1923. This occasion was made possible through the courtesy of the Agricultural Bureau of the Greenville Chamber of Commerce and was held in the Imperial Hotel. The entire day was given over to sightseeing and was very much enjoyed by the prize winners.

Short Courses:

The State Short Course was held at Clemson College in July. It lasted two weeks with forty boys in attendance. Short courses and camps were held in twelve counties. The object of these meetings was to give the members in the various counties recreation and group instruction. They served to broaden the vision of the club members, to make new acquaintances, and lend variety to their work.

Club Exhibits:

The club exhibit at the State Fair in Columbia was an excellent demonstration of the ability of the club members to select good corn, peanuts, livestock, etc. Many favorable comments were passed upon the merits of this exhibit by leading men of the state. Fifteen club shows were held in as many counties, to exhibit the products which the club members produced during the year. Sometimes

they are held in connection with the county fairs, but usually there is a separate day set aside for this purpose, and a well arranged program planned for the occasion.

Business men have contributed their influence and support to club work very whole-heartedly during the year. The same is true with the State Superintendent of Education and county superintendents. Much inspiration and encouragement has been gained from the support given by newspapers and farm papers.

Bright Outlook:

The outlook for boys' club work is very bright. It is realized that these boys, trained and broadened through the efforts of the county agents and others, will be the leaders of the next generation of farmers, and that rural life will be in the future just what this generation of boys conceives it to be. The effect of club work on the boys will result in more knowledge, a broader vision, a keener intellect, a more sympathetic attitude toward constructive progress, and a more wholesome rural life. If the club work does nothing more than to get the boys started off on the right track in their life's work, it will be a great factor for good in the future.

Below are some figures which give an idea of the financial influence of club work. It will be noted that these figures include only the results from members making complete reports. In many cases the reports of members were not complete, but these figures are omitted from the tables.

Table 9.—General Results of Boys' Club Work

| | |
|---|-------------|
| Total members enrolled | 1,594 |
| Percentage of these making complete reports | 21 |
| Number community clubs organized | 72 |
| Number of community club members | 1,149 |
| Total value of all club work | \$18,128.53 |
| Total cost of production (all club work) | 6,838.66 |
| Total profit earned (all club work) | 11,289.87 |

Total 10.—Results of Corn Club Work

| | |
|---|-------------|
| Number members enrolled | 649 |
| Number members making complete reports | 207 |
| Percentage of members enrolled making reports | 32 |
| Of the records submitted: | |
| Total production, bushels | 10,107 |
| Average yield per acre, bushels | 48.4 |
| Total value corn produced | \$10,089.07 |
| Total cost of production | 3,784.43 |
| Average cost per bushel | 38½ |
| Total profit earned | 6,270.41 |
| Average profit per boy | 30.29 |

Table 11.—Results of Pig Club Work

| | |
|---|-------------|
| Number members enrolled | 723 |
| Number members making complete reports..... | 105 |
| Percentage members reporting | 14 |
| Of the records submitted: | |
| Number of animals produced | 319 |
| Total value of these animals | \$ 4,299.63 |
| Total cost of producing these animals | 2,228.83 |
| Total profit earned | 2,060.80 |

Table 12.—Results of Cotton Club Work

| | |
|---|-------------|
| Number members enrolled | 40 |
| Number members making complete reports | 20 |
| Percentage enrolled reporting | 50 |
| Of the records submitted: | |
| Total pounds seed cotton produced | 27,270 |
| Total pounds lint cotton produced | 10,232 |
| Average yield pounds lint cotton per acre | 511 |
| Total value of cotton produced | \$ 2,880.23 |
| Total cost of production | 766.98 |
| Total profit earned | 2,112.25 |

Table 13.—Results of Miscellaneous Club Work

| | |
|--|-----------|
| Number members enrolled | 62 |
| Number members making complete records | 17 |
| Percentage of these making reports | 27 |
| Value of products produced | \$ 859.60 |
| Cost of products produced | 482.42 |
| Profit earned | 377.18 |

Summer Camps:

During the past summer twenty-three clubs encampments and short courses have been held in South Carolina for the club boys, with a total attendance of something more than seventeen hundred boys. This gives an average of approximately seventy-five boys per encampment. The smallest attendance in any county was eight; the largest was more than seven hundred, this encampment being held in Pickens County at Table Rock Cove.

Many letters from club boys have come into the office of the club leaders expressing appreciation for the good instruction received and recreation enjoyed by them, says I. D. Lewis, Assistant Boys' Club Leader, who quotes the boys as saying that as a result of this training, they have learned how to grow better livestock and field crops, how to conduct community meetings, also that the encampments have provided the best time they have ever had in their lives.

This training has been made possible through the co-operation

of the parents, Mr. Lewis explains, for it not been for their willingness to let the boys do club work, the boys would not have received this training. Many boys who are not club members this year, and who visited the encampments and short courses, have found that the club members are gaining valuable experience, and have expressed an earnest desire to become members next year.

Quite a number of parents have also attended the short courses, which lasted from one to three days, and were delighted with the type of work being done by the boys. They say that they know of no other organization where the boys can secure the valuable training which they are receiving as a result of their club work. The echo from the parents should encourage more fathers and mothers to advise their boys to do club work another year; and it is sincerely hoped that this will happen, and that more parents will visit the short courses next summer.

PROJECT NO. 15: RURAL CREDITS AND INSURANCE

This project is a joint undertaking between the Bureau of Agricultural Economics, United States Department of Agriculture (\$2,000.00), Clemson Agricultural College (\$1,000.00 for teaching), and the Extension Service (\$600 for travel). The underlying idea in this work is to teach our rural people to co-operate for their mutual benefit in business matters. It is expected that this work will result in mutual insurance associations being formed on county basis with provision for re-insurance on state basis. It is also hoped that a number of credit unions will be formed among farmers as has been done in other parts of the country. A state-wide meeting was held in Columbia in November of representatives of mutual insurance associations and others interested in organizing such associations. This matter was thoroughly discussed and plans laid for the organization of mutual insurance associations throughout the state. Mr. Mills offered many suggestions at this meeting and, in fact, his influence is largely responsible for the meeting being called. These mutual insurance associations will insure against fire with provision for re-insurance of excess fire risks and windstorm risks. It is probable that a number of livestock and crop insurance associations may also be formed.

NEW LINES OF WORK UNDERTAKEN DURING THE YEAR

(1) The equipment of county offices as described above with consequent reduction in number of specialists (April 1, 1923).

(2) The appointment of a full time extension plant pathologist (May, 1923).

(3) The publication regularly each month of "The Carolina Club Boy," a sheet of special interest to members of boys agricultural clubs.

(4) The appointment of a specialist in cash crops such as soybeans, peanuts and cowpeas, to encourage the development of these crops for market purposes (July, 1922).

FUNDS FOR EXTENSION WORK FROM ALL SOURCES FISCAL YEAR ENDING JUNE 30, 1923

| | |
|--|--------------|
| 1. State appropriation (State Smith-Lever) | \$110,862.85 |
| 2. Federal Smith-Lever Appropriation | 156,014.49 |
| 3. County Funds | 99,224.24 |
| 4. U. S. Department of Agricultural Funds | 32,100.00 |
| 5. Miscellaneous Funds | 7,000.00 |

TOTAL RESOURCES \$405,201.58 a

a. Of the above total \$123,038.41 was expended for home demonstration work and work in cities under the general supervision of Winthrop and the immediate supervision of Miss Christine N. South.

EXPENDITURES BY PROJECTS

| No. | Project | Total E- penditure | State S. Lever | Federal S. Lever | U.S.D.A. Funds | County Funds | Misc. Funds |
|--------------|---|-----------------------|-------------------|---------------------|-------------------|-----------------|----------------|
| 1. | Administration | \$ 27,503.97 | \$ 1,041.69 | \$25,262.28 | \$ 1,200.00 | | |
| 2. | Printing and Distr. Pub..... | 6,894.63 | 5,435.83 | 1,458.80 | | | |
| 3. | County Agents | 145,269.69 | 67,375.67 | 35,151.64 | 18,195.00 | \$55,137.91 | \$7,000.00 |
| 4. | Home Demonstration | 123,038.41 | 30,207.61 | 38,280.58 | 8,025.00 | 44,086.33 | |
| 5. | Negro Demonstration | 12,646.83 | 9,166.83 | | 3,480.00 | | |
| 6. | Livestock | 12,540.98 | | 12,540.98 | | | |
| 7. | Dairy | 11,031.58 | | 11,031.58 | | | |
| 8. | Agronomy | 20,414.23 | | 20,414.23 | | | |
| 9. | Horticulture | 14,406.14 | 12,381.30 | 2,024.84 | | | |
| 10. | Poultry | 3,701.84 | 3,701.84 | | | | |
| 11. | Marketing | 14,114.74 | 9,262.52 | 4,852.22 | | | |
| 12. | Entomology | 4,997.34 | | 4,997.34 | | | |
| 13. | Botany and Pl. Pathology... | 1,232.63 | 1,232.63 | | | | |
| 14. | Boys' Club Work | 6,654.24 | 5,454.24 | | 1,200.00 | | |
| 16. | Credit Union and Mutual Fire Insurance | 754.33 | 754.33 | | | | |
| TOTALS | | \$405,201.58 | \$110,862.85 | \$156,014.49 | \$32,100.00 | \$99,224.24 | \$7,000.00 |

PERSONNEL EXTENSION SERVICE

1922-1923

A. Administrative Officers.

| | | | |
|--|-----------|-------------|------------------|
| 1. W. W. Long, Director of Extension | 4,250.00 | \$ 3,650.00 | \$ 600.00 |
| | Extension | State | Federal U.S.D.A. |
| Title and Name. | Salary | S-Lever | S-Lever Funds |
| 2. D. W. Watkins, Asst. Director of Extension | 3,250.00 | | 2,650.00 600.00 |
| 3. H. S. Johnson, District Agent | 3,000.00 | | 2,400.00 600.00 |
| 4. A. A. McKeown, District Agent | 3,000.00 | | 2,400.00 600.00 |
| 5. T. B. Young, District Agent | 3,000.00 | | 2,400.00 600.00 |
| 6. C. C. Newman, Chief of Horticulture | 1,000.00a | \$1,000.00 | |
| 7. C. P. Blackwell, Chief of Agronomy | 1,066.66a | | 1,066.66 |
| 8. H. W. Barre, Chief Botany and Pl. Path. | 600.00a | 600.00 | |
| 9. A. F. Conradi, Chief of Entomology | 666.66a | | 666.66 |
| 10. J. P. LaMaster, Chief of Dairying | 1,066.66a | | 1,066.66 |
| 11. L. V. Starkey, Chief of Animal Husbandry..... | 1,066.66a | | 1,066.66 |
| 12. A. B. Bryan, Agricultural Editor | 2,500.00a | | 2,500.00 |
| 13. B. O. Williams, Supervising Agent Boys' Club Work | 2,250.00 | 1,650.00 | 600.00 |
| 14. F. L. Harkey, Chief Div. of Markets | 3,000.00 | | 3,000.00 |

(a) Receive additional salary from College and Experiment Station.

B. Specialists.

A. L. DuRant, Livestock Specialist.
 D. T. Herrman, Livestock Specialist.
 W. J. Sheely, Livestock Specialist. a.
 C. G. Cushman, Agent in Dairying.
 W. J. Keegan, Dairy Husbandman.
 F. C. Shelton, Agent in Dairying.
 J. L. Carberry, Agronomist.
 R. W. Hamilton, Peanut, Soybean and Cow Pea Specialist.
 S. L. Jeffords, Forage Crop Specialist.
 P. H. Senn, Plant Breeder.
 Geo. P. Hoffman, Extension Horticulturist.
 C. A. Owens, Asst. Extension Horticulturist. a
 A. E. Shilletter, Asst. Extension Horticulturist.
 N. R. Mehrhof, Poultry Husbandman.
 L. H. Lewis, Agent in Marketing.
 D. D. Whitcomb, Packing and Grading Specialist.
 E. S. Prevost, Bee Specialist.
 W. D. Moore, Assistant Pathologist.

a. These positions abolished effective July 1, 1923.

C. COUNTY AGENTS

| Name | County | Name | County |
|------------------------------|--------|-----------------------------|--------|
| O. E. Baker, Marion. | |, Edgefield. | |
| C. L. Baxter, Beaufort. | | J. W. McLendon, Florence. | |
| T. A. Bowen, Pickens. | | J. C. Miller, McCormick. | |
| H. G. Boylston, Barnwell. | | T. M. Mills, Newberry. | |
| S. M. Byars, Anderson. | | J. P. Quinerly, Lee. | |
| Earnest Carnes, Spartanburg. | | L. G. Prentice, York. | |
| T. M. Cathcart, Dorchester. | | Z. D. Robertson, Allendale. | |
| A. H. Chapman, Greenville. | | C. A. Rose, Abbeville. | |
| J. R. Clark, Richland. | | H. K. Sanders, Chester. | |
| J. M. Eleazer, Sumter. | | J. M. Sanders, Kershaw. | |
|, Saluda. | | J. W. Shealy, Lexington. | |
| S. W. Epps, Dillon. | | S. C. Stribling, Cherokee. | |
| Rudolph Farmer Oconee. | | W. J. Tiller, Chesterfield. | |
| C. L. Gowan, Aiken. | | C. L. Vaughn, Laurens. | |
| E. P. Gullette, Greenwood. | | A. H. Ward, Darlington. | |
| J. H. Harvey, Berkeley. | | J. F. Williams, Sumter. | |
| W. F. Howell, Lancaster. | |, Orangeburg. | |
| H. M. Kinsey, Colleton. | | W. D. Wood, Union. | |
| R. H. Lemmon, Fairfield. | | Gustavus York, Hampton. | |
| C. L. McCaslan, Calhoun. | |, Bamberg. | |
| M. M. McCord, Georgetown. | |, Horry. | |
| G. C. McDermid, Charleston. | |, Williamsburg. | |
|, Jasper | |, Clarendon. | |
| | |, Marlboro. | |

LOCAL AGENTS

H. E. Daniels, Assistant Director.

| Name | County | Name | County |
|--------------------|---------------|-----------------|---------------|
| Benjamin Barnwell, | Beaufort. | W. B. Harrison, | Anderson. |
| W. C. Bunch, | Spartanburg. | W. H. Hilyard, | Greenwood. |
| G. W. Daniels, | Orangeburg. | E. D. Jenkins, | Bamberg. |
| J. E. Dickson, | Richland. | Jason Maloney, | Sumter. |

D. CLERKS AND STENOGRAPHERS

Mrs. Helen S. Torrence, Agricultural Librarian.
 S. W. Evans, Treasurer, a.
 E. B. Elmore, Bookkeeper. a.
 C. M. Hall, Chief Clerk and Accountant.
 Lila Bunch, Stenographer.
 Rebecca Edmonds, Stenographer.
 Leila Hart, Stenographer.
 Julia Hook, Mailing Clerk. a
 Marie D. Law, Stenographer. a
 Rosa Morrison, Stenographer.
 Gary Cheatham, Stenographer.
 Mrs. Louise H. Blakely, Stenographer.
 Harriet V. Moore, Stenographer.
 Ella Norris, Stenographer.
 a. Receive additional salary from College and other sources.

E. HOME DEMONSTRATION

This list of agents not shown for the reason they are working under immediate supervision of Winthrop College and names will appear in report of Winthrop College.

Yours very truly,

W. W. LONG,
Director.

Report of the S. C. Experiment Station

To President W. M. Riggs,
Clemson College, S. C.

Dear Sir:

Below is given a summary of the Annual Report of the South Carolina Experiment Station for the fiscal year ending June 30, 1923. The full report is published under separate cover.

During the past few years we have been gradually changing from a one-crop system to a diversified system of agriculture. Many factors have contributed to these changes thus far and there are certain additional factors each year which serve to direct the trend of our progress. There are, of course, certain fundamental policies and general practices which are good for all time and are but little affected by changing conditions. On the other hand, the margin of profit is so small and there are so many factors which go to determine the profit or loss in the production of many of our crops and products that variation in any of the more important of these may determine our success or failure along a given line.

Unstable economic conditions throughout the world, coupled with price fluctuation, labor shortage, and the boll weevil menace at home, are influencing to a large extent our present programs and policies. The unstable economic conditions have reduced the purchasing power of Europe and therefore reduced the demand and kept down the prices of certain of our products. The scarcity of labor has increased the cost of production and kept us from increasing the acreage of certain crops which require a large amount of hand labor, and the boll weevil has reduced the per acre production of cotton to where the cost is materially increased and a larger acreage required to produce a sufficient quantity to satisfy the world's demands.

These economic conditions are bringing about fundamental changes and we are fortunate in having a background of years of experimentation and research upon which to plan our new practices and pitch our new crops. In some instances the exact scientific knowledge for most rapid progress is lacking on account of insufficient funds and facilities to enable our research institutions to go thoroughly into the many problems needing solution, but in the main there is sufficient scientific background to furnish a foundation upon which to build.

The research workers of this institution have striven zealously to meet the emergencies as they have developed, and we have under way investigations along many lines which seem to be important in our agricultural development. Satisfactory progress has been made with these investigations along almost all lines. A short summary of the accomplishments of the year together with progress reports

on the more important projects are given below. A list of the problems now being investigated will be found at the end of this report.

EXPERIMENTS WITH BEEF CATTLE AND HOGS.

The more diversified our agriculture becomes the greater is the need for increasing our livestock. During the past ten years our production of corn has increased 8 percent, of oats 22 percent, and of hogs 17 percent. During the same period, the peanut acreage in South Carolina has increased from 7596 acres in 1909 to 36,000 acres in 1922. While there are no figures available for velvet beans, the indications are that this crop has increased probably ten-fold during the last ten years. As we increase the production of feed, we necessarily need more livestock, and there has been a great increase in the number of all classes of hogs and beef cattle in the state.

With the increased importance of livestock and the increased production of comparatively new feeds many new problems need solution. The Station has already given to our farmers the results of many practical feeding experiments which have proven invaluable from an economic standpoint.

Beef cattle and sheep have proven profitable in utilizing the waste and the surplus roughage and grain grown on the farms and in converting the vegetation of our waste lands into meat. We have millions of acres of land in South Carolina that are producing but scant returns because they are not being properly utilized. Our rough hill-sides, our cut-over pine lands, and the bottom lands which overflow so frequently that it is not profitable to cultivate them, should be converted into pastures and forests. We have experiments under way here at Clemson looking to the better utilization of the rough hill lands and the bottom lands of the Piedmont, and are conducting pasture experiments in the cut-over pine lands at our Coast Station at Summerville.

In the production of beef cattle the cost of wintering is a big factor. With us the wintering period at best will extend from three to four months, and in some cases it is longer than this. Last year we published results of fattening tests with beef cattle which showed that velvet beans when fed with peavine hay and corn silage constituted the cheapest ration that we could use and also produced very satisfactory results. This year we were unable to repeat the fattening test, but secured 27 yearling steers and divided these into 3 lots for wintering tests. The rations used were cotton seed meal and corn silage compared with soaked velvet beans and corn silage and dry velvet beans and corn silage. The animals not only kept in good condition on a maintenance ration of these feeds but made gains of .8 pound per day on the cotton seed meal and .7 pound and .9 pound per day respectively on soaked and dry velvet beans. The cost of this gain was about the same—.13c. per pound—with each ration.

Numerous tests in the past have shown the value of forage in re-

ducing the cost of producing hogs. This year we have completed tests at Clemson where pasture, plus a corn ration, has been compared with corn and tankage in dry lot and corn alone in dry lot. These tests show that when corn is 2 cents per pound an acre of of this gain was about the same—13 cents per pound—with each ration compared with a balanced ration of corn and tankage.

One of the big problems in fattening hogs in the South is the high cost of corn. Corn is of course the basis for the carbohydrate portion of all hog rations in the sections of the country where hogs are produced in large quantities. Unfortunately corn brings a higher price in South Carolina than in any State in the Union except Utah. This is because we produce only about 40 percent of what we consume and we have to pay the purchase price in the middle west plus freight. This of course puts us at a disadvantage in competing with the man in the corn belt. We can produce more and cheaper forage per acre and we are fortunate in having certain nitrogenous concentrates that are peculiar to the South. The problem of producing an abundance of cheap carbohydrates however has not yet been solved. The velvet bean has seemed to be the most promising substitute for corn. The enormous increase in acreage during the past few years, coupled with the large yields which are obtained, make velvet beans very cheap, ranging from \$18.00 to \$24.00 per ton. Velvet beans have been promoted as hog feed for several years, but there is a lack of careful experimental data as to their relative value when fed to hogs.

We are conducting experiments in an effort to determine the value of velvet beans when fed alone in different ways as well as the value of velvet beans in mixed feeds. We have recently completed one test with eighty hogs and another test with thirty hogs making such comparisons.

These tests together with other experiments we have conducted in the past lead us to believe that velvet beans are not nearly as valuable when fed to hogs as they are when used as concentrates for beef and dairy cattle.

EXPERIMENTS WITH DAIRY CATTLE

Dairying is rapidly taking first place in our livestock development. This is as it should be because there would seem to be a great future for the dairy industry in this section. The dairy cow produces a greater return for the feed consumed than does any other animal. Her of cows we now have. The big problems to be solved by the research workers and practical dairymen are all grouped around increased production per cow and proper utilization of home grown feeds so as to cut down the cost of the grain ration.

We have experiments under way testing different methods of breeding cattle, coupled with official testing as a means of increasing the production of the individual animal, and are conducting feeding tests to determine the comparative value of different feeds and The demand for dairy products can hardly be met by twice the number the best rations for milk production.

The official testing of dairy cattle is one of the most important projects we are conducting at the present time. This consists of keeping accurate daily records of the milk and butter fat production of certain cows in our own herd at Clemson College and of individuals in the herds of the most progressive dairymen of the State. All of this work is supervised and managed from Clemson College, and all of the records are certified to by the head of the Dairy Division of the Experiment Station. The actual testing of the herds in the State is done by men employed by this office but paid by the various cow testing associations.

The average of 63 yearly records completed during the year by all three breeds is 11,907 pounds of milk and 479 pounds of butter fat. This average for the previous year on 92 records was 10,084 pounds of milk with 435 pounds of butter fat. The average cow in the United States produces about 160 pounds of butter fat per year. The average in South Carolina is still lower than this. These records therefore represent a yield of butter fat almost three times as great as that produced by the average cow.

Silage is a big factor in the success of the commercial dairyman. It takes large quantities of silage to maintain the average dairy herd and the cost of producing this silage is an important consideration. For several years we have been making comparative tests with corn and sorghum silage and the progress of this work has been reported in our annual reports. Last year we reported that sorghum silage is 96 percent as efficient in producing milk and about 97 percent as efficient in producing butter fat as corn silage. Additional tests have been made since that time and the conclusions are about the same. The later tests have been more comprehensive than the ones first started and we plan to get out a bulletin on this subject in the near future. On the farm here this year we produced 14 tons of sorghum silage per acre while the average yield of corn silage on the same land during the past three years was about nine tons per acre.

In the majority of grain rations for dairy cows a large percentage of the carbohydrates come from corn or corn meal. On account of the high price of corn in South Carolina this portion of the ration is very expensive and we have been making an effort to find a good substitute for corn in the grain ration. The velvet bean on account of the large yields produced and the low price at which the beans and the meal can be purchased has seemed to be about the best substitute for the more expensive corn. We have for several years been making feeding tests with velvet beans and the summary of one test along this line was included in our last annual report. Since that time we have concluded other tests and have published Experiment Station Bulletin No. 216 on this subject.

The results from the earlier tests indicate that velvet beans may constitute 50 per cent of the grain ration. Later tests conducted with rations made up of 50 percent velvet beans, 20 percent corn meal, 20 percent wheat bran, and 10 percent cotton seed meal, com-

pared with a basic ration of 20 percent cotton seed meal, 40 percent wheat bran, and 40 percent corn meal, showed that the ration containing 50 percent velvet bean meal was much more profitable and almost as productive as the ration without any velvet beans. The value of the products above the cost of feed in groups of cattle fed on these two feeds were as follows: the mixture containing 50 percent velvet bean meal \$106.23; the mixture without velvet beans \$71.98.

BOLL WEEVIL CONTROL

The big outstanding problem in the South today is the development of practices which will enable us to produce cotton profitably under boll weevil conditions. While this is primarily a southern problem, the entire world is tremendously interested in the way we meet the situation. This was strikingly illustrated by the attendance and the expressions at the National Boll Weevil Menace Convention which met in New Orleans on October 25th and 26th, 1923. This convention was called by the President of the Louisiana Bankers' Association, and there were present representatives from all important business interests in the country. The cotton manufacturers, the cotton exchanges, the bankers, the machinery manufacturers, the railroads, fertilizer manufacturers and distributors, as well as the farmers and technically trained experts, were represented and took an active part in this convention. When American production of cotton dropped from a maximum of seventeen million bales in 1914 to an average for the past three years of ten and one-half million bales, with the world's demand for cotton increasing all the time, the shortage naturally became an international problem. Up until 1914 we produced 70 percent of the world's cotton. Our present production is hardly 50 percent of the world's demand and only 60 percent of the world's production.

While we are profiting by the world shortage of cotton and the resultant high price, we should realize that these conditions are serving to stimulate as never before the effort to increase the production of cotton in other countries of the world. We must therefore devise methods of weevil control which will enable us to produce our share of the world's cotton and produce it economically if we are to maintain our supremacy in cotton production and at the same time make a reasonable profit.

Our scientists and our progressive farmers have studied and worked with cotton for generations and before the arrival of the boll weevil had developed very satisfactory methods of producing and handling this important crop. Much of this excellent work, however, is now of little value because economic production of cotton under boll weevil conditions is an entirely different matter from profitable production without the weevil. It seems that almost every important step in producing cotton will have to be changed to meet these new conditions. New practices will have to be developed as to methods of

culture, time of planting, methods of planting, kind of fertilizer to use, time of applying fertilizer, distance in the rows, width of the rows, varieties, and rotations with other crops. In addition to these fundamental practices which are of importance in producing the crop, there is the big problem of direct control of the weevil by use of poisons.

Our research department has worked away at this problem of profitable production of cotton for some years and had secured large amounts of data on varieties, fertilizer, cultural practices, etc., which have been of tremendous value to our people, but we of course could not begin serious boll weevil investigations in South Carolina until the weevil had reached the state and had become sufficiently well established to insure his normal behavior under our conditions. During 1922 we conducted experiments at our stations and in co-operation with farmers to determine the value of calcium arsenate dust as a boll weevil poison, and the results of these tests were given in our last annual report.

Realizing that this problem of economic production of cotton overshadows all other farm problems, and feeling that the intensive application of scientific methods of investigation would eventually aid in working out better and more profitable practices of production, we decided to organize a boll weevil control division in this department and ask the Federal Department of Agriculture to co-operate with Clemson in undertaking investigation on a large scale at some point in South Carolina to represent the southeastern part of the cotton belt. The United States Department of Agriculture readily agreed to co-operate in this undertaking and the Legislature made an appropriation of \$25,000.00 this year with which to begin the work. The Federal Government set aside a similar amount for this purpose. The work was organized and begun with headquarters at Florence, and with Dr. N. E. Winters, a well trained scientist of long and varied experience in charge of the division.

Besides the special lines of research organized under this division at Florence and other points in the state, we have rearranged some of our work at Clemson so as to devote more time and effort to cotton problems. Professor Conradi with two regular assistants and six temporary helpers during the summer has had direct charge of the general experimental work with poisons in the Piedmont section of the state, and has made an intensive study of some new and promising poisons. Professor Blackwell and Mr. Buie with three temporary assistants, and Dr. Ludwig with three helpers during the summer, have made careful studies of cotton and its reaction to different factors and to boll weevil attack. In fact, the major line of work with us now is cotton and boll weevil investigation, and a large share of the time and facilities of the Divisions of Botany, Entomology, and Agronomy are directed towards solving these important problems.

Work At Florence: In planning and organizing the work in boll weevil control at Florence and for other points of the state, there were numerous lines of investigation that suggested themselves and

seemed of sufficient promise to justify the expenditure of time and money in their solution. There were, however, certain **outstanding** lines of inquiry which seemed of major importance at the time, and since our funds and facilities were not sufficient to cover the entire field, we decided to undertake first the experiments which might be expected to yield early results, and thus relieve our farmers from the embarrassing position in which they found themselves during the fall of 1922. Many different poisons and methods of poisoning the weevil were being recommended to our people and there was more or less confusion as to which method was best. We decided, therefore, to make a special effort during 1923 to test out under varying conditions and at as many places as possible the more promising of the liquid and dry poisons which were being advertised and recommended. We were also impressed with the great lack of definite information as to many of the practices of producing cotton under boll weevil conditions and determined to make an effort to secure more definite information on the effect of certain factors, such as spacing, varieties, cultural practices, fertilizers, seed treatment, time of planting, topping, pruning, etc., under different degrees of boll weevil infestation.

Mr. B. R. Coad and Dr. W. D. Hunter, and their associates of the United States Bureau of Entomology, who had been in close touch with these problems for many years, took a leading part in formulating these plans and developing the organizations to carry them out. Messrs. R. W. Moreland, V. V. Williams, and H. C. Young, of the Delta Laboratory, were transferred to Florence to take charge of important lines of these investigations. Mr. Moreland has conducted the field plat work at the Pee Dee Station and on farms in Florence and Darlington counties. Mr. V. V. Williams has conducted the co-operative experiments on the farms in Lee, Lexington, Kershaw, and Chester counties. Mr. Young has had charge of testing various poisons under controlled conditions in cages and in the field. Mr. H. S. McConnell, an Entomologist of some years experience, was employed as assistant entomologist to conduct the field plat work in Dillon, Dorchester, Barnwell, and Clarendon counties. Mr. E. E. Hall, a well trained Agronomist and cotton expert of long experience, was engaged to conduct the agronomic and plant studies work at the Pee Dee Station. Twenty-four temporary assistants were employed to help with the detail work in the fields during the summer. Some of these were stationed at Florence and others on farms throughout the state where they could be in the fields every day and keep accurate record of every phase of the experiment.

We found such a large number of proprietary mixtures and poisons which were being advertised and sold to our farmers as "sure cures" for the boll weevil that we decided early in the season to try out some of these on cotton in the field under controlled conditions. There were so many of these proprietary mixtures that it was impossible to test them all on a large scale in the field, so the only

method that we had left was to try them under controlled conditions in a limited way. Forty wire screen cages 4 feet square and 4 feet high were used for these investigations. The cages were placed over cotton plants out in the field and a certain number of weevils were introduced into each cage. The plants in the cages were then treated with some one of the poisons and observations made from time to time as to the results. In all cases cages with an equal number of weevils were left without treatment as checks to compare with the treated plants. Many of the materials were found to be injurious to the plants themselves and some were more toxic to the plant than to the boll weevil. Much valuable information was secured in this way, and the mixtures that gave promising results early in the season in these tests were then given more extended tests on large areas in the field.

Field Tests With Poisons: We found from our field tests during 1922 that calcium arsenate dust is effective in controlling the weevil but at that time we had no means of comparing its effectiveness with molasses calcium arsenate mixtures, or the various proprietary mixtures on the market. Realizing that many of our people were using these mixtures and depending solely upon them for weevil control, we planned to make comparisons of the effectiveness of calcium arsenate dust, calcium arsenate molasses mixtures, Hill's mixture, and the Florida Method, by testing these on the same farms and comparing the poisoned plats in each case with an unpoisoned area as a check. Two hundred such experiments were conducted in Anderson, Barnwell, Chester, Clarendon, Darlington, Dillon, Dorchester, Florence, Lee and Lexington, Oconee and Pickens counties. Except in Florence and Darlington counties, and in Anderson, Oconee and Pickens, where the work was conducted from Florence and from Clemson College, these experiments were located on farms where ten or twelve one to two acre plats, which were uniform and similar in every respect, could be secured. A man was placed on each of these farms where he could make daily observations and keep accurate records on the weevil activity and the development of the crop. This work was in turn closely supervised by Messrs. Nickels, Moreland, McConnell, and Williams, and all of the records carefully checked every few days. Under these conditions we secured a large amount of accurate experimental data that will be extremely valuable in planning our next season's operations.

In many places the weather controlled the weevil to a large extent this year, so conditions were unfavorable for experimental work looking to weevil control. During June and the first half of July we had very hot dry weather and in some of our fields 98 percent of the first generation of the weevil died in the immature stages inside the cotton squares. For this reason the weevils of the first generation which began hatching out about July 5, were comparatively few in number and in many fields infestation was not high enough before August to reduce the yield of cotton. As a result

of these seasonal factors no method of poisoning paid in some fields until after migration began in August. Some fields in which we worked were exceptions to this general condition in that we had heavy infestation early in July. In these fields certain poisoning methods showed high net profits in comparison with the checks which received no treatment. The results of this year's work are not yet complete, but we have gone far enough with the picking and with analyzing the data to be able to draw a few general conclusions.

Previous to square formation applications of either the home mixture of calcium arsenate, molasses, and water, or of Hill's mixture or of the calcium arsenate dust killed a large percentage of the weevils in the field. In some cases from 80 to 98 percent of the weevils were found dead in 96 hours after the applications were made. The dry dust was more effective when applied while there was dew on the plants. While these early applications killed a large percentage of weevils, in no case were we able to completely eliminate the weevils from the fields in June by from 3 to 4 applications of liquid poison or of dry dust. The indications are that where the initial infestation is reduced to a minimum by means of these early applications the time will be delayed at which mid-season and later applications of dust will need to be made. The yields thus far obtained indicate that little increase in the yield of cotton was produced as a result of these early applications, the only advantage being the possible saving of one or two applications of poison later in the season. Of course the percentage of infestation and the weather conditions are important factors in connection with the value of early poison.

The results from this season's work show very clearly that after the plants get large enough to begin to bloom freely the only effective means of reducing weevil infestation is by the use of a dust cloud of calcium arsenate applied with a machine that thoroughly atomizes the dry dust and gives a blast that drives the material down through the cotton plant. It seems that the use of the dust cloud is the only effective method at present of permeating every nook and corner of the plant with the poison and reaching the weevil where he feeds in the squares. Applications of liquid poison applied later in the season seem to prevent the infestation from increasing as rapidly as it did in the untreated areas, but in no case did this treatment completely hold the weevil in check after the rains started the middle of July. All of the results of this year's work will be published in bulletin form within a few weeks, so we shall not attempt to include detailed results of the experiments here.

New Poisons: The apparent shortage of calcium arsenate last winter and spring caused us to think seriously of additional poisons in connection with our boll weevil work. There is of course still danger of calcium arsenate shortage if a very large proportion of the cotton farmers should attempt to use this material in any one season. The cotton acreage in the United States will probably continue to be between 35 and 40 million acres and while it will probably never be

profitable or advisable to attempt to poison more than half of this acreage, yet the poisoning of 20 million acres with calcium arsenate dust would require a great deal more material than can be produced any time in the near future.

During the winter of 1922 Professor Conradi made a very careful survey of the field and decided to try some of the poisons which are used in fighting other insects and see if these could not be adapted to boll weevil control. Of the materials tried, the most promising results were secured with nicotine. This material prepared according to certain formulas gave results in the laboratory which were very encouraging, and during the early part of the summer Professor Conradi and Mr. R. H. Pestell, a commercial chemist who was associated with him in this work, began a series of experiments in the fields at Clemson and in the adjoining counties. It was learned in the early stages of the experiments that nicotine, properly made according to the formulas which they were using, would not injure even the young and the most tender parts of the cotton plants. As a result of this season's work Professor Conradi is convinced that nicotine products can be developed to where they will be valuable in the fight against the boll weevil in 1924. A bulletin is being prepared on this subject for publication by the first of the new year.

Weevil Hibernation: The hibernation work referred to in our last annual report was continued at Clemson, Florence and Summerville during the winter of 1922, and is now being inaugurated at all of these places for the coming winter. This work is being greatly enlarged, sixty cages including more than 40,000 weevils being used in the experiments at Florence this winter.

GROWTH AND FRUITING STUDIES WITH COTTON

Successful cotton production is now largely dependent upon our ability to get the crop to grow off rapidly and fruit early. In fact we have a race every year between the cotton plants and the boll weevil. The over-wintered weevils cannot begin to lay eggs for the new generation until the first squares are from 7 to 10 days old. From this time on it is largely a matter of setting a crop of bolls before the weevils can increase sufficiently to destroy the crop. During an average season where the infestation of these first squares by over-wintered weevils is not too heavy the cotton plant wins out in the race to the extent of producing from one-third to half a crop. During the season of 1923 in this state where the infestation from over-wintered weevils was light and the dry hot weather killed a very large percent of the first generation weevils before they came out of the squares, the cotton gained on the weevil to such an extent that we made two-thirds to three-fourths of a crop in most section before the weevils became abundant enough to do serious harm. During 1922 in many sections the weevils increased as rapidly as the cotton grew, consequently, we had almost a complete crop failure. From the standpoint of cotton production under weevil conditions therefore rapidity of growth, rapidity of fruiting, and earliness are exceedingly important.

We have for several years been studying in a general way the fruiting habits of different varieties and have observed the influence of fertilizer, cultural practices, etc., on earliness and have in this way secured general information of much value. Realizing the great need for definite information of a fundamental nature as to what constitutes earliness and what factors promote rapid development and early fruiting, we have organized an Adams fund project along this line.

In this connection we are studying the influence of the following factors on growth and development of the cotton plant: spacing of the plants in the row and width of row; fertilizers, kinds, amounts and time of application; cultural practices; varieties; seed treatment; time of planting; pulling off the early squares, as recommended in the Florida method; and topping. This work has been conducted by the Divisions of Agronomy and Botany here at Clemson and by the Division of Boll Weevil Control at the Pee Dee Station. Six temporary assistants were employed at Clemson and six at Florence on this project during the summer, and large amounts of data have been secured on all phases of the subject studied.

During the past three years we have conducted spacing tests at both of the sub-stations and at Clemson, and practically every season at each of these places we have gotten the highest yields where the stalks were spaced from 6 to 12 inches apart in the drill and where the rows were from 3 to 3 1-2 feet apart. This year we have made a careful detailed study and counts of squares and bolls on individual stalks and sections of rows in these tests and have obtained a great mass of figures as to the influence of spacing on fruiting and development. Counts made on the 23rd of June at Florence showed that the cotton spaced 3 inches apart in the drill in 4 feet rows had enough squares already formed at that time to produce two bales of cotton per acre, while the section where the stalks were spaced 24 inches apart in the row only had about one-fifth as many squares at that date. These close spacings produced 60 percent of the total yield at the first picking on September 6, while the plats in which the stalks were 24 inches apart had only 39 percent of the total yield on the same date. The average yield for a number of years at all three stations is distinctly in favor of thick spacing, and in all cases the closely spaced cotton is earlier.

In our seed treatment tests we have delinted seed with sulphuric acid, have planted similar seed not delinted, seed rolled in soda, seed delinted with hydrochloric acid gas, and seed delinted at the oil mill. These tests were conducted both at Clemson and at Florence. The seed delinted with sulphuric acid came up ahead of the others and not only produced a higher total yield but gave a higher percent of the yield at the first picking.

We have for some years been making observations on the fruiting habits and development of the varieties of cotton used in our variety tests, and in addition to these observations, began last year to make careful counts on a limited number of the plants in each

variety to determine accurately the rapidity of fruiting and development and this year have charted plants in each variety giving a complete life history of the development of individual stalks. These data are not yet complete and no conclusions can be drawn from them. We have observed in a general way, however, that the varieties which started fruiting first were Trice, Ocala, Sugar Loaf, King, and Lightning Express. The varieties which set fruit most rapidly during the early part of the season were Trice, Ocala, and Carolina Foster. There was a difference, however, in the way the different varieties held their fruit and some stopped blooming earlier than others, so that in the end the varieties that set the largest number of bolls per plant were Carolina Foster, Sugar Loaf, Salisbury, Trice, and Cleveland. Cleveland fruited well throughout the season, held a high percentage of the fruit which was set, and did not shed as badly as some others. Lightning Express ranked first in the percentage of total crop matured at the first picking.

On account of the keen interest aroused in rapidity of fruiting and the length of time between square formation and maturity of bolls by the Florida method of boll weevil control, as discussed in bulletin No. 165 of that station, we have endeavored to secure accurate information on the effect of stripping off the early squares upon the rapidity of growth and development of the squares and bolls that are formed later. At the main station at Clemson these studies were made on two varieties, Cleveland and Webber 49. Certain plants were stripped of all squares on the dates of July 12, July 21, and July 31. These plants, as well as the check plants which were not stripped, were carefully charted throughout the season so that we have an accurate history of the growth and development of each square and boll. The work at Florence was conducted in a similar manner and with a larger number of plants. This season's work at Clemson and at Florence indicates that pruning off the first squares does not result in any net increase in bolls or in any gain in earliness.

We have studied a great many different factors in connection with growth and development. Individual plants have been charted and daily observations made throughout the season, in our fertilizer plats, in our culture studies, in the spacing tests, and with different varieties. A total of 290 plants were studied in this way at Clemson, and a total of 380 at Florence. This gives us a great deal of accurate information upon the growth and development of individual buds and bolls, and we hope by careful analysis of all these data to get some indication as to the fundamental factors which influence earliness.

Some observations have been made this season upon the rapidity of the development of bolls. A large number of bolls were tagged the day that they bloomed and measurements were made at weekly intervals until the bolls were matured. We were somewhat surprised to learn that in both varieties, Cleveland and Webber, the bolls reached their full size in 18 days.

We have also attempted to measure the hardness of bolls at different stages of development and Dr. Ludwig has measured the resistance of the boll to puncture with a needle as an indication of hardness. These measurements show that the boll hardens very rapidly after the first 10 days to two weeks, and the data obtained so far lead us to believe that it would be difficult for weevils to penetrate the inner layer of the boll wall after about two weeks. It is interesting to observe in this connection that in the case of the Webber variety the boll hardens more rapidly than in the case of the Cleveland. At the end of two weeks it took 221 grams weight to force the needle through the inner wall of the Webber bolls and 185.4 grams to force the needle to penetrate the inner wall of the Cleveland bolls. This difference was consistent throughout.

All of these studies of growth and development of the plant and its reaction to weevil attack require a tremendous amount of labor, and will of course require several years to secure sufficient data from which to draw definite conclusions. These lines of work are so important however from the standpoint of cotton production under boll weevil conditions that we propose to make every effort to carry them through to completion.

EXPERIMENTS WITH CROPS

Our common field crops continue to produce more than sixty percent of the income of the farms of this state. In 1922 the ten leading crops had a total farm value of \$143,000,000. In spite of the fact that the 1922 cotton crop was the smallest produced in this state over a long period of years, being slightly more than half a million bales, its value of \$75,000,000 was greater than the combined value of the other nine leading crops. The cotton crop for 1923 will probably bring \$120,000,000. The value of other important crops such as corn, hay, tobacco, and potatoes, has increased so that the percentage of our income which comes from these few staple crops has also increased. Successful farming, therefore, with us is largely a matter of economic crop production.

Many of the factors which influence soil fertility and economic crop production are being investigated by our research department at Clemson, at our sub-stations, and on farms throughout the state. Our Agronomy Division is conducting a great many experiments which extend over several years and reports of progress are not made on these every year. Some of the most important of these are: studies of the influence of different factors on the oil content of cotton seed and peanuts; study of the factors causing barrenness in corn; studies of the adaptability of various new planting introductions, especially forage crops and grasses; breeding work with oats, rye, wheat, and barley.

We practice certain carefully planned rotations on all of our experiment stations and farms and are gaining much valuable information from these rotations from year to year. In some cases where

it is necessary to continue certain crops on the same land for several years we grow cover crops during the winter and in this way maintain the organic content and the fertility of the soil. We have at both of our sub-stations and at Clemson certain carefully checked experiments for the purpose of determining the actual value of certain rotations. In our last annual report we referred to the 3-year rotation at the Pee Dee Station where the fertility has been maintained and as good crops produced without fertilizer as it required 1000 pounds of an 8-4-4 to produce on adjoining lands not in rotation.

Another interesting rotation which we have had under way for several years at the Pee Dee Station is a 2-year rotation of corn and cotton compared with adjoining plots which are planted continuously to corn and others which are planted continuously to cotton both with and without fertilizer. In this case the rotation without fertilizer has increased the production by 420 pounds of seed cotton per acre over the acre not rotated.

In our variety tests at all three stations we are finding the most productive and most profitable varieties of cotton, corn, small grain, etc., and are recommending those best adapted to the different sections and conditions. In many cases the difference between profit and loss is determined by the variety one plants. Some seasons there is a difference of more than fifty percent in yield between the best and poorest varieties in our test.

The breeding work which we have under way with cotton, corn, barley, oats, wheat, rye, and velvet beans is progressing satisfactorily and we are developing some high yielding strains of all of these crops. This work is slow but there are such great possibilities for adding to our production by creating superior strains of crops that we must continue to emphasize the breeding work. A good example of the value of such work is the production of the Dixie Triumph cotton which was produced several years ago by this station in cooperation with the Bureau of Plant Industry. The Dixie Triumph is the outstanding wilt resistant variety now in use in South Carolina, North Carolina, and Georgia on wilt infested soils, and if it were not for this variety large areas of wilt land could not be grown in cotton successfully. The older wilt resistant varieties are too late to be grown successfully under boll weevil conditions.

EXPERIMENTS WITH FERTILIZERS.

Since South Carolina expends annually from twenty-five to fifty million dollars for fertilizers, an amount larger than that expended by any other state in the Union, it is but natural that the fertilizer problem should loom large before our farmers and that the South Carolina Experiment Station should devote a large share of its energy towards determining the most judicious use of fertilizers. Fertilizers, however, can be most efficiently used only after we understand what combinations and amounts are best suited to the different soil types

and to the different crops; the time and method of their applications; and the relation they bear to plant development. It is along these lines that we are now directing our experiments with the view of determining methods by which our fertilizer investments will yield the highest return.

We are of course continuing our general fertilizer experiments at all of the stations and in cooperation with farmers throughout the state. These experiments include fertilizer tests with all of our principal crops as well as special tests with certain new crops that we are beginning to grow on a larger scale. Bulletins are issued giving these results from time to time and information accumulated from year to year is used almost every day in advising individual farmers how best to fertilize their crops, and in giving county agents similar information applicable to the soil types represented in their counties.

Of special interest at this time are tests planned to find out what are the best fertilizers for producing cotton most economically under boll weevil conditions. These tests have been under way for several years.

The results obtained in 1923 confirm the conclusions previously drawn, that is: our soils are most deficient in nitrogen, and when the need for this element is filled, phosphorus becomes the next limiting factor of plant growth. Potash has not proven of as much benefit as either of these on the majority of our soil types, although small applications of this element usually prove beneficial and larger applications are necessary on some soils.

The time and rate of application of top dressing to cotton under boll weevil conditions is extremely important. In our test conducted this year, it is plain that an application of a side dressing of soda at any time during the season had a tendency to delay the maturity of the crop but in every case the yield was higher than where no side application was made. The highest yield this season was secured when 100 pounds of soda were applied at the first plowing after the cotton was thinned.

Co-operative Soil And Fertilizer Experiments: There is probably no other state the size of South Carolina which has so many different soils. The Bureau of Soils of the United States Department of Agriculture has recognized and classified something like 200 individual soil types in South Carolina. Of these, however, there are only some ten or fifteen types, or closely related groups of types, which are extensively farmed. With such a variety of soils the fertilizer needs are very different for the different sections.

Realizing that the information obtained in the fertilizer tests at the regular stations would not answer all the questions as to the needs of the soils in every part of the state, the Agronomy Division three years ago began fertilizer tests on representative soil types in cooperation with individual farmers. The progress of this work has been very satisfactory the past year, and we have been able to add

tests in Lancaster and McCormick counties. This makes a total of eight places where cooperative experiments are now in progress.

Each of these experimental fields consists of from seven to ten acres of land, and is divided into plots either one-fifteenth or one-tenth acre in size, and the fertilizer treatment varied for these individual plots. Half of each plot has ground limestone applied once in the rotation, which gives valuable information as to the value of lime when used with and without the various fertilizer mixtures.

While these experiments were designed primarily to determine the fertilizer requirements of cotton and corn, these being our staple money crops, a great deal of valuable information as to the fertilizer needs of other crops is also being obtained. Already we find in some sections a modification of the fertilizer practices, which is directly due to our recommendations based upon results obtained in these tests.

COST OF PRODUCTION STUDIES

Realizing that many of our cropping systems and farm practices which seem best for the individual crop and for present conditions are unsound and uneconomical from the standpoint of our permanent agricultural advancement, we have for several years kept accurate records of all of the operations and costs involved in producing the crops in the different fields on the Experiment Station farms. A careful study of these records from year to year has shown the excessive costs and poor economy of certain practices and has indicated methods by which improvements could be made and cost of production lowered.

We have also made some preliminary studies of farms throughout the state in an effort to find the comparative cost of producing the different crops in the different sections and under the different cropping systems and farm practices. Some mention of these preliminary studies was made in our last annual report. A brief statement of further progress is given below.

During the spring of 1922 we took up with the Bureau of Agricultural Economics of the United States Department of Agriculture, the matter of cooperative work along this line, and finally perfected an arrangement by which such work could be undertaken jointly by the Department and the College. We were unable to secure a satisfactory man for the work during 1922, but early in 1923 we were able to induce Mr. W. C. Jensen, who was formerly employed here as Assistant in Agricultural Economics, and who was pursuing graduate study along this line at the University of Wisconsin, to come back and take up this work.

The object of the broad investigations which we have under way now are to study the economic factors involved in the operation and management of cotton farms with a view of obtaining fundamental facts and figures for determining the best plans for farm organization under boll weevil conditions. This survey has been pursued thus far

by Mr. Jensen and two assistants. In Anderson county 333 farms have been surveyed. In the surveys the field men use a twenty-one page outline in recording the data from each farm. This includes the farmer's records and estimates of the amount and cost of man, horse, and implement labor involved in the production of each crop under the wages, tenant, and share-crop systems, and gives a business analysis of each crop and division of the farm as a unit of operation. A careful and complete business analysis is also made of the entire farm so that we not only know the profit or loss on the individual operations and crops but the profit or loss on the farm as a whole.

PLANT DISEASES.

The Botany Division continues to investigate the various diseases of plants which are prevalent and destructive in this state. We are continuing to devote some attention to cotton diseases and have a few unfinished phases of the cotton anthracnose problem which are still under investigation. As a result of the control measures which have been worked out for such cotton diseases as anthracnose, wilt and leaf spot, all these diseases are now under control and thousands of dollars are saved annually to the farmers who grow cotton. We now have wilt resistant varieties (Dixie Triumph and Dixie Cook) developed that are sufficiently early to produce crops under boll weevil conditions. We hope to publish at an early date a station bulletin giving the results of our complete studies with cotton anthracnose.

In our plant disease survey three new diseases have been found in the state, a bacterial disease of English pea, a disease of Mung beans and a stem blight of snap beans. Dr. Moore found the bean blight causing the loss of the entire crop in some fields in Greenwood county. Investigation work is now in progress on all three of these diseases.

Among the common diseases prevalent in the state this season probably the most serious damage was caused by watermelon anthracnose. Serious loss had resulted from this disease last season and spraying demonstrations were planned in several counties in the southern part of the state this year. Dr. Moore, who had charge of this work, found that three applications of Bordeaux mixture held the disease in check. In a large number of fields spraying meant the difference between the success and failure of the crop.

During the year we began work on a new project,—“A study of the influence of sulphur upon sweet potato diseases.” This investigation is in cooperation with the National Research Council, who furnish us a man to carry on the work. The laboratory studies have been made at Clemson and the field experiments at Clemson and at the Pee Dee Station at Florence.

EXPERIMENTS WITH FRUITS AND VEGETABLES

The varied soil and climatic conditions of South Carolina permit the growth of a great variety of fruits and vegetables during practically all seasons of the year. Our most progressive people have appreciated the possibilities of developing the home orchard and garden and have made these yield abundant returns of fruit and vegetables for home use and for the local markets, but it is just within the past few years that the production of these crops on a commercial scale for the eastern and northern markets has been undertaken.

Among the truck crops and vegetables that are constantly increasing in importance in this state are Irish potatoes, sweet potatoes, cabbage, lettuce, onions, cucumbers, melons, and celery. The carlot shipments of cabbage have increased from 1,087 cars in 1920 to 3,286 in 1922. The acreage of sweet potatoes increased during the same period from 76,000 acres to 104,000 acres.

In the fruit industry we also find a new and serious interest. Commercial peach growing in the sand hill section and apple growing in the Piedmont section are becoming established industries. Much of this development is due to experiments conducted at Clemson and at our sub-stations at Florence and Summerville.

It is the purpose of the South Carolina Experiment Station to keep abreast of these developments so as to be in a position to advise farmers entering the field of fruit growing or trucking for the first time and to assist the established grower in discovering the most modern practices and the most efficient methods. In addition to the usual lines of experimentation, we are constantly trying out new and promising plants introduced into this country by the Office of Seed and Plant Introduction, of the United States Department of Agriculture with a view of adding new and valuable plants to our list of profitable crops. We are continuing our variety and fertilizer tests of fruits and vegetables as well as our breeding work on the Lookout Mountain potato. Our work of comparing certified and non-certified seed Irish potatoes has given some very conclusive results in favor of certified seed. A bulletin giving results of these tests is now in the process of publication.

The fertilizer experiments which we are conducting in cooperation with growers are giving much valuable information on the proper fertilizers for Irish potatoes and lettuce on the different soil types of the region along the coast. The cooperative fertilizer tests on peaches are also giving us much needed information as to the kinds of fertilizers to use on both young and bearing peach trees. We have plans under way for additional cooperative experiments with the asparagus growers and with some truckers who are beginning to grow celery as a spring crop.

THE CLEMSON COAST EXPERIMENT STATION.

The Coast Station is located on the cut-over pine lands of the lower coastal plain at Drainland, twenty-four miles northwest of Charleston on the Southern Railway. There are over three million acres of cut-over land in South Carolina, and this sub-station was started in 1908 for the purpose of conducting experiments in reclaiming those lands and developing practices looking to their utilization for agricultural purposes. Some splendid results have been obtained from the experiments with field crops, fertilizers, fruits, and vegetables, and these have been published from time to time and have served to improve the agricultural practices in this section of the state. The work at this station was seriously handicapped for several years on account of lack of funds, but since the Legislature began in 1920 to make appropriations for agricultural research the work has gone forward and much more rapid progress is now being made along all lines.

The Office of Drainage Investigation, of the United States Department of Agriculture, has continued to cooperate with us in studying the effectiveness of our drainage system. Six Sanborn recorders were installed and operated during the year for the purpose of securing continuous records of the water levels in certain areas. As a result of these studies we have found that in certain sections of our land where the drainage ditches were put 120 feet apart the drainage is not nearly as satisfactory as where the tiles were laid only 60 feet apart. We now propose to lay additional lines in these sections, making the ditches 60 feet apart.

If we were to make comparisons of the most important agricultural and economic problems in South Carolina at the present time, I would say that the protection and reforestation of our cut-over and waste lands in South Carolina is next in importance to boll weevil control. Of the ten to eleven million acres of land in South Carolina not utilized for other purposes and which ought to be growing trees, not more than half is in forests. In the large majority of cases these forests are receiving no particular attention with a view of making them produce the best quality and the maximum quantity of timber. We are cutting about twice as much timber as we are growing and it is easy to see that at this rate our present timber supply will not last more than 25 or 30 years.

The big problem from the forestry standpoint is the reforestation of the cut-over and abandoned lands. This is a comparatively simple matter in most sections of the state. If fires are kept out and a few seed trees are left our pines will readily come back. What we need most of all is to protect these cut-over and young forests from fire. It is estimated that fire burns over 40 percent of our cut-over and wood lands every year. The annual loss to timber and growing trees alone probably exceeds one-half million dollars. In addition to this, we have a still greater loss resulting from the de-

struction of the very small trees which are just getting started. A few thousand dollars of state funds expended in cooperation with the United States Forestry Service would go a long way toward controlling these fires and saving this enormous loss.

During the past 12 years we have conducted experiments at the Coast Station looking to the development of methods of reforesting these cut-over pine lands. We have made intensive studies of methods of seeding our common species of pine and have introduced several species which are not native to this section. This work has been conducted in cooperation with the Forestry Service of the United States Department of Agriculture, and is now producing results which are of value in making recommendations as to reforesting these waste lands. The slash pine which we planted five years ago on a plat of land in this experimental area now measure from 10 to 14 feet in height. Studies made of growing trees of this species elsewhere show that it will produce a saw log in from 30 to 35 years. This means that two crops of timber can be grown during the life of the average individual. We are also making studies of the natural reproductions of the Long Leaf and the Loblolly pines, and are studying the influence of burning upon natural reproduction and rapidity of growth of these pines. Where the land is burned over every year we get no reproduction at all with any of the species except Long Leaf pine. Only a few scattering individuals of this specie survive the fires and these grow very slowly and seldom develop into good vigorous trees. Where the fires were kept out all three of the species of pine common to this section re-seeded themselves abundantly and grew off rapidly. In fact some of our pastures where we kept fires out for 6 or 8 years have grown up to such thick stands of pines that the grass has been entirely shaded out.

We are continuing pasture experiments along the lines reported in our last annual report. We are continuing to increase the areas seeded to Lespedeza and Carpet grass, and while this mixture does not produce good pastures on the poorest of these cut-over lands they are producing a good sod and excellent grazing on lands that are sufficiently fertile to support growth. Where a small amount of fertilizer has been used to start the Carpet Grass off it has grown much more rapidly and produced a sod in a much shorter time than where the seed are sown on the poor cut-over lands without any fertilizer. One of the principal difficulties in making pastures in this section is the removal of the shrubbery which interferes seriously with getting pasture grasses started. We have used a herd of goats very effectively in keeping down the small shrubbery until the grass gets started, but our best development has come from areas where we have gone in and grubbed up the small oaks and gallberries and plowed the land before seeding. In this way good pastures have been developed in one season.

We are continuing to build up our herd of Aberdeen-Angus cattle

and are using these for grazing tests and wintering experiments at this station. We are weeding out the poor individuals among the grades which we have had for several years and are retaining only the pure bred and the best grades. A large part of the herd will be utilized during the winter for experiments to determine the best ration for wintering a breeding herd.

Since we have completed overhauling the drainage system at this station and all of the land is producing better crops and has been improved in uniformity, we are gradually increasing the experimental work with crops at this station. In addition to the variety and spacing tests with cotton and the experiments with time of applying fertilizer and the cultural tests reported in other parts of this report, we are conducting cover crop tests in which we are comparing the relative value as soil builders of several summer and winter cover crops which are rotated with cotton and corn.

We are continuing to test new plant introductions, especially those which show promise for forage and pasture. Among the most encouraging of those recently introduced are the subterranean clover and Serradella.

The corn variety tests already referred to in this report are being duplicated at this station.

In addition to these experiments with cotton, corn, pasture plants and forage, we have for the past two years in cooperation with the Office of Cereal Investigations, of the United States Department of Agriculture, tested about 40 strains of upland rice. This year eight of the most promising strains were planted in one-tenth acre plots and very satisfactory yields were obtained. The results of these tests are so encouraging that we are prepared to recommend the most promising strains for planting on similar soils in this section, especially for the production of rice for home use.

The boll weevil control experiments conducted at this station were along the same lines as reported from the other stations and were planned and supervised by the Boll Weevil Control Division, at Florence. The results of these tests will be included in the preliminary report which is being prepared on this season's work along this line.

We are continuing to conduct experiments at this station with the principal truck crops grown in this region. Of special interest at this time is the fertilizer test with Irish potatoes. The results procured here in the source of seed test with potatoes correspond with those secured elsewhere and show that certified seed produce much higher yields than the common run of seed purchased on the open market.

We are continuing our experiments on the comparative cost of growing onions from seed and from sets, and on the fertilizer requirements of lettuce. These experiments are duplicated at the other stations and results will be published as soon as the work has gone far enough to warrant conclusions.

THE PEE DEE EXPERIMENT STATION

The Pee Dee Station was established at Florence ten years ago and has grown with remarkable rapidity. At first only a small amount of experimental work could be done and that was principally a duplication of that being done at the main station at Clemson. The work of this station has now grown to include a great number of projects, and the results from these are proving to be sign posts to better agricultural practices, not only for the farmers of this section, but for those of the state at large.

Located as it is in the center of the prosperous Pee Dee section of the state, this station has proved an excellent place for headquarters for our Division of Boll Weevil Control Work. An office building of six rooms was constructed to accommodate the Agronomists and Entomologist and assistants working in this division and all of the work has been directed from here. Much of the land and many of the facilities of this station have been used during this season in the boll weevil control work. This has of course enabled us to make the maximum progress with the smallest possible expenditure of public funds and has thus promoted efficiency and economy in this important line of research.

While the Pee Dee Station and the Boll Weevil Control Division are organized as separate units in the Department of Agricultural Research, they have cooperated so closely in this important undertaking that there has been no conflict and no lost motion. This has been due, of course, to the patriotic spirit and loyal devotion of the workers of these divisions to the institution, and their deep interest in the problems which we are attempting to solve.

The Boll Weevil work has already been discussed at some length. A summary of some of the other important lines of investigation under way at the Pee Dee Station is given below.

We have always devoted particular attention to variety tests with our common field crops at the sub-stations. The results from these have been referred to elsewhere and do not need to be repeated here. The tests with cotton and corn are of great importance and the farmers of the eastern section of the state look forward each year to the publication of the results showing which varieties of corn, cotton and small grain produce the highest yields. It is largely through these tests that Cleveland, Dixie-Triumph, and Webber cotton and Pee Dee No. 5, Douthit and Garrick corn come to be so widely grown throughout the state.

Our variety studies with peanuts and sweet potatoes at this station include practically all known varieties of these crops, and total 40 varieties of sweet potatoes and about 20 varieties of peanuts. From these tests six varieties of sweet potatoes and three varieties of peanuts seem worth planting on a larger scale.

The breeding work at this station is continuing to produce results. The breeding work with peanuts has resulted in the production of strains more productive and higher in oil content than the common varieties. Superior strains of sweet potatoes of the Nancy Hall variety are being increased for distribution. The Pee Dee No. 5 corn originated here, is being improved from year to year by further selection and progeny row breeding and has become a standard variety in this section of the state. We are cooperating with Dr. C. H. Kyle, of the Bureau of Plant Industry, in some intensive breeding work with some promising pure lines of high yielding strains of corn and are testing out certain crosses from these. There is indication that some of these might prove more productive than the varieties now in use. The strain of velvet beans selected and bred by Mr. Kyzer, of this station, continues to produce high yields and is gaining favor where it is being grown.

Soil fertility and fertilizer studies continue to be important lines of investigation at this station. We now have 36 acres of land in this kind of work, much of this being divided into one-tenth acre plots, and all of it into plots less than one-half acre in size. Reference has been made in other sections of the report to the data secured from these fertilizer tests conducted in connection with crop rotations. In these tests we are comparing all known combinations of different fertilizing ingredients, and we are also making comparative tests of the value of different sources of plant food.

In addition to these studies, experiments are under way to determine the best method and time of applying fertilizer. Such fertilizer tests and soil fertility studies are being conducted with all of our field crops as well as with potatoes, peanuts, Irish potatoes, lettuce, and peaches.

Much of the experimental work which we are conducting with hogging off different crops is done at this station. The tests with peanuts, sweet potatoes, corn, and velvet beans mentioned in last year's report, and already referred to in this report, are being repeated this year at this station. Good crops with high yields have been produced in all the plots this season and the tests should give us much important information on the comparative value of these different crops in the economical production of pork.

The adaptation test of seventeen different grasses and combinations which we have had growing at the station for two years have been inspected by hundreds of farmers interested in livestock. The carpet grass seems to be particularly adapted to this section and gives continuous grazing throughout the growing season. Possibly the next best combination is that of Bermuda grass and Lespedeza. Two other grasses which show considerable promise here are Sudan grass and Napier grass.

During the year it was necessary to turn over the old sweet potato storage house to the Division of Boll Weevil Control. In order to meet our needs for sweet potato storage we have converted one of our tobacco barns into a storage house. We have kept a careful record of all costs pertaining to the conversion and are keeping

accurate records as to temperature, etc., during the storage period. This method of converting tobacco barns into sweet potato storage houses was devised several years ago by Mr. R. E. Currin, Superintendent of the station, and has since come into very general use.

LIBRARY

An agricultural library is of primary importance in our experiment station work. Our library, under the supervision of a trained and efficient librarian, is gradually coming to be one of the most valuable assets of the station. During the year additional facilities have been provided for the museum, and we now have the entire first floor of the south wing of the Agricultural Hall devoted exclusively to the library. This has greatly improved the crowded conditions which existed previously.

The annual report of the librarian, Mrs. Helen Sloan Torrence, shows much further progress in work done and service rendered. During the fiscal year 1922-23, there were 94E books accessioned and made ready for the shelves. There were 183 volumes bound and 204 books added to the library. This does not take into consideration 11,070 bulletins and 3,718 copies of agricultural journals received during the year.

PUBLICATIONS

The publications of the Experiment Station are in greater demand than ever before. This is particularly true regarding certain crops which have become popular under changing agricultural conditions.

The mailing list now contains more than five thousand names, mostly South Carolina farmers. The list is classified so that any given publication is sent only to those who have asked for material on the subject to which the publication belongs. In this way much waste of printed matter is prevented. Notice of new publications is always given to the public through the press, and all publications are sent free to those asking for them.

Five publications were issued during the fiscal year ending June 30, 1923. They are as follows:

Bulletin 212, Analyses of Commercial Fertilizers.

Bulletin 213, Rations for Weanling Pigs.

Bulletin 214, Comparisons of Shelled Corn, Rice Meal, and Velvet Beans for Fattening Steers.

Bulletin 215, Lettuce Varieties.

Thirty-fifth Annual Report for Year Ending June 30, 1922.

In addition to these regular publications, we are continuing the practice of writing News Letters and special articles for the Weekly News Notes and for agricultural journals and newspapers, calling attention to the new publications of the station or to older publications of new importance. Special articles are prepared by members of the station staff for use in connection with the various publicity plans of the Division of Publications. The material in these

articles is based largely upon results of research work, and in this way the public, is given a wider and better knowledge of the work which the station does, and the new farm facts discovered from time to time are carried into the homes of all of our people.

PROJECTS UNDER WAY

The following is a list of projects now under way in the Research Department:

Agronomy Division.

- Cotton culture and spacing tests.
- Corn cultural tests.
- Ear to row breeding work with corn.
- Effects on corn of companion cropping with legumes.
- General comparative fertilizer tests.
- Comparative tests of phosphoric fertilizers.
- Comparative tests of potash fertilizers.
- Comparative tests of sources of nitrogen.
- Variety tests with corn.
- Variety tests with cotton.
- Variety tests with wheat.
- Variety tests with oats.
- Variety tests with barley.
- Variety tests with sorghum.
- Variety tests with peanuts.
- Variety tests with velvet beans.
- Variety tests with soybeans.
- Comparative tests of grasses and forage crops.
- Tests with imported grasses and forage plants.
- Plant to row selection of wheat.
- The inheritance of barrenness in corn.
- A study of inheritance in oats.
- The effect of stirring soil on moisture content, oxidation, nitrification and crop yield.
- A study of factors influencing oil content of cotton seed.
- Comparative tests of nitrogenous fertilizers at the Pee Dee and Coast Stations.
- General comparative fertilizer tests with cotton, corn, and small grain at the two sub-stations.
- Breeding work with cotton.
- Breeding work with corn.
- Breeding work with wheat.
- Breeding work with barley.
- Breeding work with rye.
- Tests on time of applying potash to cotton.
- Tests on time and method of applying fertilizers to cotton.
- Test of theoretical amount of fertilizer compared with popular formula.

The comparative value of different legumes as soil improvers when used in rotation with cotton and corn.

General comparative fertilizer tests conducted in cooperation with farmers on various soil types.

The effect of continuous fertilizer on soil composition.

Animal Husbandry Division.

Comparative tests of the value of velvet bean meal, peanut meal and cottonseed meal in hog feeds.

Comparative tests of rape, crimson clover, burr clover, alfalfa, rye, and barley as winter grazing crops for hogs.

Factors influencing production of soft pork.

Tests with the breeds of sheep.

Breeding experiments with horses and mules.

Comparative tests of peanuts, sweet potatoes, soybeans, velvet beans and corn for pork production.

A study of the food value of velvet beans for hogs and beef cattle.

A comparison of protein feeds for pigs.

Cost of producing hogs.

Botany Division.

A study of the factors influencing the growth and development of cotton buds and bolls.

A study of corn root diseases.

A study of rust resistance in small grains.

A study of the bacterial diseases of cotton.

Plant disease survey.

Miscellaneous cotton disease investigations.

Forestry experiments to determine methods of seeding and rate of growth of various species.

Cotton anthracnose investigations.

The bacterial content of milk and its control.

Dairy Division.

The determination of the most economical carbohydrate concentrate to balance the dairy ration in the south.

The prepotency of bulls.

Corn silage as compared with sorghum silage for milk production.

The feed required and the cost of raising dairy calves.

Line breeding and out-crossing as systems of breeding dairy cattle.

Line breeding of Holsteins.

Official testing of dairy cows in the state.

Entomology Division.

Winter packing of bees.

Effect of temperature moisture on insect activity.

The influence of different factors on the hibernation of the boll weevil.

Dusting as a means of boll weevil control.

The toxicity of insecticides.

Horticulture Division.

Nitrate of soda test on bearing peach trees.
Fertilizer test on young and bearing peach trees.
Variety tests with apples and grapes.
Methods of pruning bunch grapes.
Tests of sources of Irish potato seed.
Fertilizer tests of Irish potatoes.
Comparison of certified and non-certified potato seed.
Breeding work on Lookout Mountain potatoes.
Fertilizer tests on lettuce.
Sweet potato investigations.

Boll Weevil Control Division.

Comparative efficiency of Calcium Arsenate dust, Calcium Arsenate Molasses Mixtures, and other liquid poisons for boll weevil control in the cotton fields in different sections of South Carolina.
Field tests with various makes and kinds of machines for applying poison to cotton.
Cage tests in the field with various boll weevil poisons and proprietary mixtures promoted for boll weevil control.
Tests with traps and machines for catching and killing boll weevils.
Effect of quality of seed cotton on yield, staple, lint percentage and money value per acre.
Effect of topping cotton on rate of fruiting and development and yield.
Effect of pruning on fruiting of cotton.
Effect of time of planting on development and fruiting of cotton.
Effect of seed treatment on yield, etc., of cotton.
Tests of methods of cultivating cotton.
Effect of late cultivation.
Time of turning under cover crops of rye.
Time and method of preparing land for cotton.
Hill test of cotton.
Cotton spacing tests.
Effect of fertilizers on fruiting habits of cotton.
Time of applying fertilizers to cotton.
Cotton variety tests.

Respectfully submitted,

H. W. BARRE,

Director of Agricultural Research.

Report of the Secretary Fertilizer Board

Dr. W. M. Riggs, President,
Clemson College, S. C.

Dear Sir:

I respectfully submit the following report of the inspection work of the Fertilizer Department for the fiscal year ending June the 20th, 1923.

With a more optimistic tone in common with other industries, the sale and movement of fertilizers commenced this season a month earlier than last year. The tonnage as indicated by sales of tags was 646,695 tons of fertilizer and 32,000 tons of cotton seed meal. The total of these figures (678,695) exceed last years figures by 171,627 tons, or 33 per cent; while data compiled from reliable sources for other states in the belt show an increase of 55 per cent. It is not believed that relative tonnage this year will represent relative cost to farmers in this State, as an unusual amount of nitrate of soda has been purchased by them,—the cheapest source of nitrogen sold on the markets,—and recommended by agricultural teachers as the most profitable under present conditions.

The prices of mixed fertilizers were materially reduced late in the season; but those maintained earlier on blood, fish, tankage and cotton seed meal were well nigh prohibitive, so that much smaller per cent of these were used in their manufacture. Our records show less than twenty per cent of cotton seed meal sold for fertilizer in South Carolina this year than some former years, and reliable data indicate that at least sixty per cent of it is exported or escapes inspection. This material will perhaps continue to find market for other purposes than fertilizer while present prices prevail.

Materials bought on coloperative plan and home-mixed by the farmers has more largely prevailed, resulting it is claimed in saving from six to ten dollars per ton. Farmers in this way can buy their materials in bulk, have them analyzed under same rules governing other fertilizers, mix them at a cost not exceeding two dollars per ton or less and know exactly what their fertilizers contain. This Department on application will aid in furnishing formulas tested and recommended by experienced farmers on any and all crops. The Piedmont section of the State will use about normal quantity, while the Southern and Eastern counties, except by growers of truck and tobacco will be reduced. The tobacco industry is growing and looming large in the State, and it is believed will require new mixtures of fertilizing materials for its more successful production and marketing.

Inspection and Analysis.

Eight inspectors were again employed this season who entered upon their work on January the 25th, and during the period of the active movement of fertilizers from factory to the farms made the inspection as thorough and intensive as possible, giving loyal and faithful service. This inspection made chiefly from January till May when rains and inclement weather have put the roads heretofore in such conditions as made it necessary for the inspectors to use the railways almost exclusively for their work; but the improved condition of the roads and highways in the last few years has made it practical to try motor cars instead for their transportation. The cost will be greater, but even with less number the work may be more effectively done.

A large majority of the samples drawn by these inspectors were by special request of the purchaser, to whom copies of their analyses were sent soon as made. Individual farmers have sent double the number drawn by themselves, thus showing their appreciation and use of this privilege under the law made for their special benefit. Results of these analyses compiled in bulletin number 217 show a larger percentage of samples deficient below their guarantee, as will appear by Dr. R. N. Brackett's detailed report.

For costs incurred in this inspection and analysis, I respectfully refer to the report of our College Treasurer.

Respectfully submitted,

H. M. STACKHOUSE.

Report of the Chief Chemist

Dr. W. M. Riggs, President,

Clemson College, South Carolina.

Dear Sir:

I respectfully submit the following report of the analytical work of this Department on commercial fertilizers, waters, etc., done for the Board of Fertilizer Control, and for the citizens of the State, and for other Departments of the college, and of referee work for other laboratories, during the year ending June 30th, 1923.

For the sake of comparison, the figures for last year are given side by side with this year:

| | 1921-1922 | 1922-1923 |
|--|-----------|-----------|
| Official samples of fertilizers | 722 | 1181 |
| Farmers' samples of fertilizers | 47 | 146 |
| Waters | 84 | 48 |
| Ores, minerals, rocks, etc., for indentification | 47 | 38 |
| Limestones, marls, and lime | 6 | 6 |
| Assays for gold and silver | 8 | 6 |
| Ashes (wood, etc.) | 1 | 6 |
| Miscellaneous | 30 | 21 |
| Experiment Station work | 668 | 403 |
| | 1613 | 1855 |

The most striking facts shown in this summary are: First, that the official samples of fertilizers have increased this year more than 63½ percent over the number received last year; second, that the farmers' samples of fertilizers have increased this year to more than three times the number received last year; third, that the number of samples of water analysed this year is nearly 43 per cent less than last year; and finally, that the number of samples analysed for the Experiment Station, or received for analysis is nearly 40 per cent less than last year.

A complete report of the work done for the Experiment Station has been made to Director H. W. Barre, but I say for your information that the 403 samples above listed consisted of: 182 samples of cotton seed, work in progress; 9 samples of feeds for the Animal Husbandry division; 8 samples of cotton seed for J. M. Napier; 26 soils; one each, sample of paris green, bordeaux mixture, white arsenic, "weevil-nip," "boll weevil destroyer," tankage, dried blood, mash for Poultry division, limestone; and 169 samples of calcium arsenate.

OFFICIAL FERTILIZER SAMPLES

Classification

| | 1921-1922 | 1922-1923 |
|---|-----------|------------|
| Complete fertilizers | 434 | 796 |
| Special mixtures (phosphoric acid and ammonia)..... | 89 | 90 |
| Acid phosphates | 73 | 97 |
| Acid phosphates with potash | 2 | 8 |
| Cotton seed meals | 30 | 39 |
| Nitrate of soda | 34 | 59 |
| American potash | 0 | 1 (?) |
| Foreign potash | 39 | 56 |
| Dried blood | 1 | 2 |
| Fish | 15 | 23 |
| Tankage | 0 | 2 |
| Sulphate of ammonia | 4 | 4 |
| Miscellaneous | 1 | 4 |
| | <hr/> 722 | <hr/> 1181 |

The miscellaneous samples were: one each, Norwegian nitrate and castor pomace; and two samples of rape-castor meal. These four miscellaneous samples, together with five samples without guarantee—consisting of one special mixture, and one each, kainit, nitrate of soda, manure salt, and sulphate of ammonia; and three samples which were mis-branded, one kainit in tankage bags, and two samples of nitrate of soda in kainit sacks—in all thirteen samples, when we add to the above one sample, which had an erroneous guarantee, are omitted from the discussion which follows, thus leaving 1168 samples to be discussed.

Deficient Samples.

Of the 1168 samples considered in this discussion, 182 fell below the commercial value based on guarantee, as follows:

| | |
|---|----|
| In available phosphoric acid | 10 |
| In ammonia | 66 |
| In potash | 30 |
| In available phosphoric acid and ammonia..... | 15 |
| In available phosphoric acid and potash | 4 |
| In ammonia and potash | 49 |
| In available phosphoric acid, ammonia, and potash | 8 |

182

Last season out of 719 samples, 94, or 13.07 per cent, were deficient in commercial value based on guarantee, while this season the number so deficient is 182 out of 1168 samples, or 15.58 per cent.

SUPPLEMENTARY REPORTS

The extent to which these 182 samples fell below the guaranteed analysis in per cent is as follows:

| | 0.00-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|-----------|-----------|-----------|--------|------------|
| In available phosphoric acid | 8 | 12 | 2 | 10 | 5 |
| In ammonia | 33 | 61 | 21 | 17 | 6 |
| In potash | 14 | 19 | 27 | 19 | 12 |
| | — | — | — | — | — |
| | 55 | 92 | 50 | 46 | 23 |

This is not quite so good a showing in ammonia as last year, and only a trifle better in potash, in spite of the abundant supply of potash salts this year.

Of the 182 samples which fell below guaranteed commercial value, 60 were deficient three per cent or more, as follows:

| | |
|---|----|
| In available phosphoric acid | 4 |
| In ammonia | 21 |
| In potash | 10 |
| In available phosphoric acid and ammonia | 4 |
| In available phosphoric acid and potash | 1 |
| In ammonia and potash | 13 |
| In available phosphoric acid, ammonia, and potash | 7 |
| | — |
| | 60 |

Last season out of 94 samples deficient in commercial value based on guarantee, 27 or 28.72 per cent were deficient three per cent, or more, while this season out of 182 samples, 60, or 32.96 per cent, were three per cent deficient, a considerable increase. When the comparison is made on the total, number of samples, last season out of 719 samples 27, or 3.76 per cent, were three per cent or more deficient in commercial value, while this season 60 samples out of 1168 were so deficient, or 5.14 per cent.

The extent to which these 60 samples, deficient three per cent or more in commercial value, fell below the guaranteed analysis in per cent is as follows:

| | 0.00-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|-----------|-----------|-----------|--------|------------|
| In available phosphoric acid | 2 | 4 | 0 | 6 | 4 |
| In ammonia | 1 | 13 | 11 | 14 | 6 |
| In potash | 2 | 4 | 8 | 9 | 8 |
| | — | — | — | — | — |
| | 5 | 21 | 19 | 29 | 18 |

In addition to the 182 samples deficient in commercial value based on guarantee, there were 360 samples which were found below guarantee, one or more ingredients, the deficiency being made up, however, by an excess of other ingredients. They were as follows:

| | |
|---|-----|
| In available phosphoric acid | 63 |
| In ammonia | 99 |
| In potash | 151 |
| In available phosphoric acid and ammonia..... | 1 |
| In available phosphoric acid and potash | 16 |
| In ammonia and potash | 30 |

 360

Last season out of 719 samples, 230 were found deficient in one or more ingredients, but not deficient in commercial value based on guarantee, or 31.98 per cent, while this season out of 1168 samples, 360 were thus deficient, or 30.82 per cent, a slight decrease.

The extent to which these 360 samples fell below the guaranteed analysis in per cent is as follows:

| | 0.00-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|-----------|-----------|-----------|--------|------------|
| In available phosphoric acid | 26 | 21 | 23 | 9 | 1 |
| In ammonia | 78 | 46 | 6 | 0 | 0 |
| In potash | 62 | 70 | 41 | 19 | 5 |
| | <hr/> | <hr/> | <hr/> | <hr/> | <hr/> |
| | 166 | 137 | 70 | 28 | 6 |

While on the whole the showing this season is no worse than last season, if any thing a trifle better, the number of ammonia and potash deficiencies from 0.00-0.10 were greater, and the number of ammonia deficiencies 0.10-0.25 were greater this season than last. .

In connection with the subject of deficiencies, the results of some of the analyses this season are interesting as compared with last season:

Acid Phosphates:—As was the case last season, there were no goods guaranteed less than 16 per cent. There were 97 samples received this season for analysis, of which five were deficient, three being three per cent or more deficient in commercial value, and two not three per cent. Last season there were 73 samples, of which two were deficient and only one of these three per cent or more in commercial value. The quality of these goods continues good, and many of them analyse from 17 to 18 per cent.

Acid Phosphates with Potash:—There were eight samples of this class of goods received this season, all guaranteed 10-0-4. Five of these were deficient on analysis: one deficient in phosphoric acid and three per cent. or more in commercial value; four deficient in potash, one of which was deficient in commercial value but not three per cent, the remainder being not deficient in commercial value. Last season there were only two samples of this class goods, guaranteed 10-0-2 and 10-0-4, both having been deficient in potash, but neither in commercial value.

In connection with the deficiencies in potash, not only in acid phos-

phates with potash, but also in other mixed goods, the following summary for the last nineteen years may be interesting. It is to be noted that none of the deficient samples here listed is deficient in commercial value.

| Year | Number of Samples | Deficient in one or more ingredients. | Deficient in Potash only | Deficient in Potash per cent. |
|------|----------------------|--|-----------------------------|----------------------------------|
| 1905 | 522 | 165 | 53 | 32.12 |
| 1906 | 655 | 201 | 62 | 30.84 |
| 1907 | 743 | 153 | 34 | 22.22 |
| 1908 | 713 | 161 | 54 | 33.54 |
| 1909 | 805 | 197 | 85 | 43.14 |
| 1910 | 1188 | 235 | 86 | 36.60 |
| 1911 | 1605 | 393 | 182 | 46.31 |
| 1912 | 1689 | 380 | 225 | 59.12 |
| 1913 | 1922 | 389 | 90 | 23.13 |
| 1914 | 2537 | 534 | 113 | 21.16 |
| 1915 | 1227 | 333 | 107 | 32.13 |
| 1916 | 1598 | 378 | 54 | 14.28 |
| 1917 | 1594 | 477 | 75 | 15.72 |
| 1918 | 1474 | 438 | 68 | 15.52 |
| 1919 | 1301 | 362 | 100 | 27.62 |
| 1920 | 1668 | 519 | 193 | 37.19 |
| 1921 | 763 | 229 | 116 | 50.65 |
| 1922 | 722 | 230 | 111 | 48.26 |
| 1923 | 1181 | 360 | 151 | 41.94 |

This summary shows that of the samples deficient in one or more ingredients, but not in commercial value, a very large percentage is deficient in potash only.

This deficiency was especially marked during the years 1909 to 1912, inclusive. While there was a considerable drop in 1913 and 1914, the percentage in 1915 was the same as in 1905. The results for 1916 to 1919, inclusive, are not very significant on account of the scarcity of potash salts. During this period many mixtures were made without potash, so-called "special mixtures," the number of such mixtures amounting in 1916 to 555, in 1917 to 640, in 1918 to 470, and in 1919 to 357. The period 1920 to 1923, inclusive, marks a period of high potash deficiency in percentage. While there is a considerable drop from last year, the deficiency this season is unexpected when we take into account the abundance and cheapness of potash salts.

Top Dressers:—The marked decrease in the number of samples of this class of goods, which fall into our hands, would seem to indicate that they are losing favor with the farmers. Year before last we had 24, last year 21 and this year only 18. Of the 18 samples analysed this season, 9, or 50 per cent, were deficient in ammonia, but only three of these nine were deficient in commercial value, one being three per cent or more. The guarantees this year as compared with last

are as follows: 2-10-2, one, deficient in ammonia, but not in commercial value—last year none; 2-7-0, twelve, of which four were deficient in ammonia, and two of these not deficient in commercial value—last year, one deficient in ammonia, but not in commercial value. 4-7 ½-0, three, all deficient in ammonia, but only one in commercial value—last year, ten of which seven were deficient in ammonia; and of these seven, four were three per cent or more deficient in commercial value, and one not deficient in commercial value. 4-10-0 one up to guarantee—last year, two, one up to guarantee, and the other deficient in ammonia but not in commercial value. There has been a decline not only in the total number of samples of goods of this class, but in the variety of guarantees, there being only four different guarantees this season as compared with 11 last season.

AVERAGES OF ANALYSES

| | —1921-1922— | | —1922-1923— | |
|--|-------------|------------|-------------|------------|
| | Found | Guaranteed | Found | Guaranteed |
| Acid Phosphates | | | | |
| Available phosphoric acid..... | 17.08 | 16.00 | 17.17 | 16.00 |
| Special Mixtures (Acid phosphates with Ammonia) | | | | |
| Available phosphoric acid | 8.63 | 8.18 | 9.06 | 8.23 |
| Ammonia | 4.01 | 3.92 | 3.74 | 3.73 |
| Complete Fertilizers | | | | |
| Available phosphoric acid | 8.68 | 2.25 | 8.72 | 8.15 |
| Ammonia | 3.30 | 3.16 | 3.56 | 3.45 |
| Potash soluble in water | 2.96 | 2.93 | 3.39 | 3.42 |
| Cottonseed Meals | | | | |
| Ammonia equivalent of nitrogen | 7.39 | 7.05 | 7.16 | 7.01 |
| Nitrate of Soda | | | | |
| Ammonia equivalent of nitrogen | 18.79 | 18.16 | 18.61 | 18.08 |
| Kainits | | | | |
| Potash soluble in water..... | 12.99 | 12.34 | 13.10 | 12.55 |
| Muriate of Potash | | | | |
| Potash soluble in water | 51.43 | 48.67 | 50.66 | 53.14 |
| Sulphate of Potash | | | | |
| Potash soluble in water | 0.00 | 0.00 | 48.96 | 49.00 |
| Manure Salts | | | | |
| Potash soluble in water | 19.46 | 20.00 | 17.83 | 20.00 |
| Acid Phosphates with Potash | | | | |
| Available phosphoric acid | 11.40 | 10.00 | 10.64 | 10.00 |
| Potash soluble in water | 2.71 | 3.00 | 3.70 | 4.00 |

As was the case for the last two years, no samples of potash were received this season designated as American, though one sample has been listed, a muriate, as doubtful, but it is believed to be American on account of the very high guarantee. The highest grade muriate now on the market is American potash.

The averages of the potash salts given above represent the following number of samples: kainits this year 41, last year 32; muriate of potash this year 4, last year three; sulphate of potash this year 4, last year none; manure salts this year 5, last year two.

The acid phosphates with potash this year 8, last year 6.

The following table shows the yearly averages of the analyses of fertilizers from the time the Board of Trustees of The Clemson Agricultural College of South Carolina took charge of the fertilizer inspection down to the present time, or from 1891 to 1923, inclusive:—

YEARLY AVERAGE OF ANALYSES FROM 1891 TO 1923, INCLUSIVE.

| Season | Acid Phosphates | | | Complete Fertilizer | | | | Cotton Seed Meals | | | | Kainita | | Muriate Potash | | Nitrate of Soda | | Acid Phosphate with Ammonia | |
|-----------|-------------------|-------------------------------------|-----------------------------------|---------------------|-------------------------------------|-------------------|-----------------------------------|-------------------|-------------------------------------|-------------------|-----------------------------------|-------------------|-----------------------------------|-------------------|-------------------|-------------------|-------------------------------------|-----------------------------|-------|
| | Number of Samples | Available Phosphoric Acid—Per Cent. | Potash Soluble in Water—Per Cent. | Number of Samples | Available Phosphoric Acid—Per Cent. | Ammonia—Per Cent. | Potash Soluble in Water—Per Cent. | Number of Samples | Available Phosphoric Acid—Per Cent. | Ammonia—Per Cent. | Potash Soluble in Water—Per Cent. | Number of Samples | Potash Soluble in Water—Per Cent. | Number of Samples | Ammonia—Per Cent. | Number of Samples | Available Phosphoric Acid—Per Cent. | Ammonia—Per Cent. | |
| | | | | | | | | | | | | | | | | | | | |
| 1890-1 | 49 | 13.02 | 11.84 | 173 | 9.34 | 2.68 | 1.96 | 30 | ..... | 8.21 | ..... | 21 | 12.75 | 1 | 15.96 | 1 | 18.22 | ..... | ..... |
| 1891-2 | 29 | 12.92 | 11.50 | 112 | 8.83 | 2.80 | 1.95 | 25 | ..... | 8.21 | ..... | 18 | 12.51 | ..... | ..... | 1 | 18.63 | ..... | ..... |
| 1892-3 | 48 | 12.82 | 11.63 | 150 | 9.00 | 2.91 | 1.65 | 20 | 2.62 | 8.40 | 1.32 | 20 | 12.06 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1893-4 | 46 | 13.24 | 12.01 | 132 | 9.27 | 2.53 | 1.79 | 22 | 2.45 | 8.64 | 1.66 | 17 | 12.37 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1894-5 | 46 | 13.55 | 12.09 | 166 | 9.42 | 2.55 | 1.77 | 33 | 2.58 | 8.19 | 1.66 | 19 | 12.30 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1895-6 | 42 | 13.43 | 11.99 | 116 | 9.31 | 2.64 | 1.86 | 34 | 2.57 | 8.45 | 1.61 | 16 | 12.45 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1896-7 | 59 | 13.61 | 12.06 | 117 | 9.55 | 2.70 | 1.91 | 40 | 2.53 | 8.69 | 1.64 | 22 | 12.44 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1897-8 | 63 | 13.67 | 11.54 | 141 | 9.15 | 2.70 | 1.93 | 39 | 2.37 | 8.89 | 1.58 | 20 | 12.68 | ..... | ..... | 1 | 19.23 | ..... | ..... |
| 1898-9 | 73 | 13.74 | 11.77 | 134 | 9.32 | 2.73 | 2.21 | 40 | 2.76 | 8.25 | 1.75 | 14 | 12.78 | 2 | 51.93 | 2 | 18.96 | ..... | ..... |
| 1899-1900 | 73 | 13.58 | 11.63 | 134 | 9.50 | 2.73 | 2.13 | 52 | 2.27 | 8.73 | 1.63 | 8 | 12.73 | 4 | 50.95 | 3 | 19.01 | ..... | ..... |
| 1900-1 | 56 | 14.00 | 11.49 | 139 | 9.40 | 2.87 | 2.47 | 60 | 2.38 | 8.55 | 1.54 | 12 | 12.61 | 2 | 48.92 | 3 | 18.96 | ..... | ..... |
| 1901-2 | 45 | 14.11 | 11.09 | 141 | 9.39 | 2.84 | 2.34 | 49 | 2.57 | 7.93 | 1.63 | 16 | 12.85 | 4 | 50.54 | 3 | 19.03 | ..... | ..... |
| 1902-3 | 51 | 13.74 | 10.94 | 139 | 9.02 | 2.69 | 2.42 | 60 | 2.27 | 8.08 | 1.48 | 15 | 12.92 | 2 | 50.25 | 2 | 18.57 | ..... | ..... |
| 1903-4 | 59 | 14.32 | 11.12 | 180 | 9.12 | 2.99 | 2.90 | 57 | 2.28 | 7.92 | 1.54 | 11 | 12.94 | 7 | 49.79 | 6 | 18.87 | ..... | ..... |
| 1904-5 | 81 | 14.81 | 10.70 | 250 | 9.19 | 3.12 | 2.90 | 62 | 2.41 | 7.42 | 1.54 | 26 | 12.54 | 6 | 50.49 | 7 | 18.73 | ..... | ..... |
| 1905-6 | 87 | 14.95 | 10.97 | 375 | 9.34 | 3.26 | 2.98 | 71 | 2.42 | 7.51 | 1.57 | 29 | 12.83 | 13 | 50.05 | 19 | 18.67 | ..... | ..... |
| 1906-7 | 111 | 14.95 | 10.72 | 390 | 9.31 | 3.29 | 3.29 | 99 | 2.68 | 7.32 | 1.69 | 30 | 12.78 | 13 | 51.52 | 20 | 18.49 | ..... | ..... |
| 1907-8 | 91 | 14.71 | 10.57 | 363 | 9.17 | 3.01 | 3.01 | 114 | 2.37 | 7.40 | 1.61 | 39 | 12.91 | 15 | 51.04 | 17 | 18.33 | ..... | ..... |
| 1908-9 | 108 | 15.02 | 10.55 | 396 | 9.16 | 3.03 | 3.08 | 115 | 2.39 | 7.27 | 1.71 | 45 | 13.03 | 14 | 50.46 | 21 | 18.26 | ..... | ..... |
| 1909-10 | 159 | 15.18 | 10.16 | 599 | 8.89 | 3.31 | 3.34 | 133 | 2.37 | 7.20 | 1.67 | 73 | 13.10 | 26 | 50.96 | 40 | 18.10 | ..... | ..... |
| 1910-11 | 187 | 15.39 | 10.11 | 942 | 9.00 | 3.34 | 3.33 | 177 | 2.46 | 7.26 | 1.59 | 63 | 13.00 | 24 | 50.18 | 50 | 18.46 | ..... | ..... |
| 1911-12 | 180 | 15.42 | 10.62 | 960 | 9.07 | 3.46 | 3.22 | 153 | 2.17 | 7.54 | 1.58 | 69 | 14.04 | 47 | 50.42 | 76 | 18.55 | ..... | ..... |
| 1912-13 | 176 | 15.83 | 10.43 | 1199 | 8.86 | 3.54 | 3.57 | 171 | 2.56 | 7.37 | 1.65 | 69 | 13.72 | 29 | 51.51 | 48 | 18.64 | ..... | ..... |
| 1913-14 | 229 | 16.10 | 10.63 | 1523 | 8.79 | 3.44 | 3.75 | 188 | 2.36 | 7.28 | 1.63 | 146 | 14.12 | 65 | 50.41 | 92 | 18.25 | ..... | ..... |
| 1914-15 | 259 | 16.30 | 10.75 | 1697 | 8.91 | 2.96 | 2.70 | 90 | 2.46 | 7.21 | 1.56 | 5 | 13.51 | 2 | 50.17 | 71 | 18.53 | 18 | 12.09 |
| 1915-16 | 200 | 16.40 | 10.72 | 1885 | 8.73 | 3.42 | 3.42 | 245 | 2.31 | 7.05 | 1.51 | 3 | 13.44 | 0 | ..... | 33 | 18.53 | 555 | 8.85 |
| 1916-17 | 118 | 16.62 | 10.90 | 971 | 8.70 | 3.31 | 2.13 | 202 | 2.44 | 6.88 | 1.54 | 0 | 0.00 | 0 | 0.00 | 45 | 18.69 | 640 | 8.76 |
| 1917-18 | 106 | 16.71 | 9.99 | 501 | 8.54 | 3.09 | 2.35 | 266 | 2.33 | 7.06 | 1.57 | 0 | 0.00 | 0 | 0.00 | 21 | 18.50 | 470 | 8.66 |
| 1918-19 | 69 | 16.86 | 6 | 544 | 8.82 | 2.95 | 2.23 | 199 | 2.34 | 7.06 | 1.47 | 0 | 0.00 | 0 | 0.00 | 11 | 18.59 | 357 | 8.84 |
| 1919-20 | 81 | 16.47 | 9.82 | 942 | 8.64 | 3.27 | 2.92 | 94 | 2.61 | 7.08 | 1.51 | 65 | 13.82 | 4 | 46.78 | 40 | 18.47 | 284 | 8.52 |
| 1920-21 | 79 | 16.53 | 6 | 1018 | 8.55 | 3.28 | 2.77 | 77 | ..... | 7.33 | ..... | 37 | 13.63 | 3 | 49.89 | 44 | 18.61 | 94 | 8.50 |
| 1921-22 | 73 | 17.08 | 2 | 1140 | 8.68 | 3.30 | 2.96 | 30 | ..... | 7.33 | ..... | 32 | 12.99 | 3 | 51.43 | 31 | 18.79 | 89 | 8.63 |
| 1922-23 | 97 | 17.17 | 8 | 1064 | 8.72 | 3.55 | 3.39 | 39 | ..... | 7.16 | ..... | 41 | 13.10 | 4 | 50.66 | 59 | 18.61 | 90 | 9.06 |

NITROGEN

Deficiencies, Sources, Availability.

Nitrogen, deficiencies:—In connection with the subject of deficiencies in nitrogen, or ammonia equivalent, the following table is interesting. It is to be noted that none of the deficient samples here listed is deficient in commercial value:—

| Year | Number of Samples. | Deficient in 1 or more Ingredients. | Deficient in Ni- trogen only | Deficient in Ni- trogen Per Cent. |
|------|-----------------------|--|---------------------------------|--------------------------------------|
| 1905 | 522 | 165 | 61 | 36.96 |
| 1906 | 655 | 201 | 87 | 43.28 |
| 1907 | 743 | 153 | 81 | 52.94 |
| 1908 | 713 | 161 | 77 | 47.82 |
| 1909 | 805 | 197 | 74 | 37.56 |
| 1910 | 1188 | 235 | 79 | 33.61 |
| 1911 | 1605 | 393 | 107 | 27.22 |
| 1912 | 1689 | 380 | 71 | 18.68 |
| 1913 | 1922 | 389 | 190 | 48.84 |
| 1914 | 2537 | 534 | 257 | 48.13 |
| 1915 | 1227 | 333 | 145 | 43.54 |
| 1916 | 1598 | 378 | 130 | 34.39 |
| 1917 | 1594 | 477 | 224 | 46.96 |
| 1918 | 1474 | 438 | 189 | 43.15 |
| 1919 | 1301 | 362 | 160 | 44.19 |
| 1920 | 1668 | 519 | 123 | 23.70 |
| 1921 | 763 | 229 | 22 | 9.61 |
| 1922 | 722 | 230 | 41 | 17.82 |
| 1923 | 1181 | 360 | 99 | 27.50 |

This table shows that of the samples deficient in one or more ingredients, but not deficient in commercial value, a very large percentage is deficient in ammonia only, with very few exceptions. The average of this deficiency for the whole period of 19 years is a trifle over 36 per cent; for two seasons it amounted to nearly 50 per cent; one season (1907) it amounted to more than 50 per cent. The deficiency this year is almost the same as in 1911. Only once in the 19 years has the deficiency been less than 10 per cent, (1921).

Nitrogen, sources, and availability:—The new fertilizer law, effective July 1, 1920, requires the manufacturer to guarantee the per cent of water—soluble ammonia equivalent of nitrogen within such limits as the Board of Fertilizer Control may prescribe. The limits now in force will be found in the first part of the Fertilizer Bulletin for 1923. The limits allowed are as follows:—for goods guaranteed up to and including 33 1-3 per cent, ten points or units; and fifteen points or units on goods guaranteed above that figure. For example, goods

guaranteed 25 per cent, would be passed if found 15 per cent, or 35 per cent; while, if guaranteed 50 per cent water-soluble ammonia equivalent of nitrogen, the goods would be passed if found 35 per cent, or 65

The following table summarizes the results of the work for this season, and shows the number of samples falling within certain percentage limits and the percentage relation of these figures to the total number of samples examined, this relation being shown in parentheses:—

| Per Cent Water-soluble equivalent of Nitrogen. | Number of Samples | |
|---|----------------------|----------------------|
| | 1921-1922 | 1922-1923 |
| Less than 10 | 0 | 0 |
| 10-20 | 0 | 3 |
| 20-30 | 0 | 1 |
| 30-40 | 3 | 3 |
| 40-50 | 9 (1.72 per cent) | 7 (0.81 per cent) |
| 50-60 | 47 (8.99 per cent) | 34 (3.92 per cent) |
| 60-70 | 100 (19.12 per cent) | 108 (12.44 per cent) |
| 70-80 | 171 (32.69 per cent) | 256 (29.49 per cent) |
| 80-90 | 154 (29.45 per cent) | 338 (38.94 per cent) |
| 90-100 | 39 (7.45 per cent) | 118 (13.59 per cent) |

While these figures speak for themselves, and show that highly water-soluble ammoniates are being used, it is fair to say that even organic ammoniates will generally analyse at least 10 per cent water-soluble ammonia equivalent of nitrogen.

Of the 868 samples examined for water-soluble ammonia equivalent of nitrogen, listed in the foregoing table, 745 were guaranteed in water-soluble ammonia, or 85.83 per cent, while last season out of 523 samples, 330 were guaranteed, or 63.09 per cent. This shows that the manufacturers are very generally complying with the law requiring the guarantee of water-soluble ammonia equivalent of nitrogen.

According to the records of the Secretary of the Board of Fertilizer Control, these 868 samples were distributed between 69 companies, or subsidiaries, seven of which did not guarantee any of their samples, but only one of the seven was represented by more than one sample. Twenty-five of the 69 companies guaranteed all of their samples, and the number of their samples amounted to 157. There were 115 samples not guaranteed, distributed between 36 companies, an average of a little over three unguaranteed samples to a company, and doubtless in some cases the inspectors failed to note the guarantee.

Last season the 523 samples above referred to, were distributed between 64 companies, or subsidiaries, of which 18 did not guarantee water-soluble ammonia in any of their samples, and the number of such unguaranteed samples amounted to 42. Thirteen companies guaranteed water-soluble in all their samples, and the number of such

samples amounted to 44. This left 151 unguaranteed samples, distributed between 33 companies, an average of over 4 1-2 samples to a company.

In the following table are given the names of the seven companies, or subsidiaries, who, according to the records of the Secretary of the Board of Fertilizer Control, failed to guarantee any of their samples in water-soluble ammonia equivalent of nitrogen, together with the number of samples in each case:—

| | |
|---|-------|
| Aiken Fert. Co., Aiken | 1 |
| Banks Fert. Co., St. Matthews | 1 |
| Boykin Chem. & Fert. Co., Baltimore, Md. | 2 |
| Carolina Ice & Packing Co., Darlington | 1 |
| Colleton Mercantile & Mfg Co., Ritter | 1 |
| Florence Seed & Fert. Co., Florence | 1 |
| Franklin Guano Co, Liberty | 1 |
| | <hr/> |
| | 8 |

In the following table are given the names of the twenty-five companies, or subsidiaries, all of whose samples were guaranteed in water soluble ammonia equivalent of nitrogen, together with the number of samples analysed:—

| | |
|--|----|
| American Fertilizer Co., Savannah, Ga. | 3 |
| Baugh & Sons, Baltimore, Md. | 1 |
| Conestee Chem. Co., Wilmington, N. C. | 2 |
| Congaree Fert. Co., Columbia, S. C. | 8 |
| Ga.-Fla. Fert. Co., Savannah, Ga. | 8 |
| Independent Guano Co., Greenville | 6 |
| Marion Fert. Co., Marion | 3 |
| Maybank Fert. Co., Charleston | 10 |
| McCabe Fert. Co., Charleston | 1 |
| Morris Fert. Co., Atlanta, Ga. | 7 |
| Old Buck Co., Richmond, Va. | 3 |
| Palmetto Guano Corp., Columbia | 1 |
| Peruvian Guano Corp., Charleston | 11 |
| Savannah Chem. Co., Savannah, Ga. | 1 |
| Savannah Guano Co., Savannah, Ga. | 8 |
| Sea Coast Fert. Co., Augusta, Ga. | 11 |
| Smith-Wilkinson Guano Co., Spartanburg | 5 |
| South Atlantic Guano Co., Atlanta, Ga. | 1 |
| Spartanburg Fert. Co., Spartanburg | 1 |
| Sumter Fert. Mfg. Co., Sumter | 34 |
| Tenn. Chem. Co., Nashville, Tenn. | 9 |
| The Carolina Chem. Co., Columbia | 14 |
| Trenton Fert. Co., Trenton | 1 |

| | |
|---------------------------------------|---|
| Westminster Oil & Fert. Co. | 1 |
| Wulbern Fert. Corp., Charleston | 7 |

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In the following table are given the names and addresses of the thirty companies, or subsidiaries, of whose goods ten or more samples were received for analysis. There are also given: the number of samples of each company; the number of samples guaranteed in water-soluble ammonia; the water-soluble ammonia guarantees (per cent of total ammonia guaranteed); the number of samples which met the requirements of the Board of Fertilizer Control; and, finally, the per cent of water-soluble ammonia equivalent of nitrogen found:

| Name and Address of Company | No. of Samples | No. Samples Guaranteed | Water-Sol. Guaranteed | No. Passed | Found per cent. |
|--|----------------|------------------------|-----------------------|------------|----------------------------|
| Am. Agr. Chem. Co., Charleston | 65 | 59 | not given | ... | 72, 90 Seven-81-88 |
| | | | 46 2-3 | 0 | 85 |
| | | | 50 | 0 | 78 |
| | | | 66 | 2 | 50, 66, 67 |
| | | | 70 | 33 | 70-85 |
| | | | | | (21)—86-93 |
| Am. Fertilizing Co., Norfolk, Va. | 13 | 7 | not given | ... | Three-70-79 Three-90-94 |
| | | | 60 | 1 | 71 |
| | | | | | 92 |
| | | | 75 | 3 | 88, 88, 90, 93, 95, |
| Armour Fert. Works, Augusta, Ga. | 44 | 40 | not given | ... | Four-75-81 |
| | | | 50 | 1 | 59 |
| | | | | | 83 |
| | | | 75 | 30 | 67-69 |
| | | | | | Eleven-72-79 |
| | | | | | Seventeen-80-89 |
| | | | 100 | 0 | Four-61-69 |
| | | | | | Four-78-84 |
| Chatham Chem. Co., Savannah, Ga. | 12 | 11 | not given | ... | 82 |
| | | | 50 | 0 | Ten-80-86 |
| | | | | | 95 |
| Coe-Mortimer Co., Charleston | 25 | 23 | not given | ... | 70, 87 |
| | | | 50 | 0 | 67, 69, 87 |
| | | | 66 | 3 | 69, 74, 75 |
| | | | | | 83, 88, |
| | | | 70 | 11 | 56-84 |
| | | | | | 47-89-91-93 |
| Dawhoo Fert. Co., Charleston | 12 | 9 | not given | ... | 64, 73, 82, |
| | | | 50 | 1 | 60 |
| | | | | | Eight-75-87 |

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| Name and Address of Company | No. of Samples | No. Sam- ples Guar- teed. | Water- Sol. Guar- teed. | No. Pass- ed. | Found per cent. |
|--|-------------------|---------------------------------|-------------------------------|------------------|------------------|
| Etiwan Fert. Co., Charleston | 20 | 15 | not given | .... | 73 82.90-four |
| | | | 60 | 0 | 83 |
| | | | 65 | 4 | 69.80. |
| | | | | | Three—81-86 |
| | | | 75 | 6 | 73-90 |
| | | | | | 95 |
| Fisheries Products Co., Wilmington, N. C. | 20 | 18 | not given | .... | 81.98. |
| | | | 50 | 0 | Eleven—71-78 |
| | | | | | Three—80-83 |
| | | | | | Two—97 |
| | | | 60 | 2 | 70.71. |
| Ga. Chem. Works, Augusta, Ga. | 25 | 24 | not given | .... | 77 |
| | | | 50 | 0 | 90 |
| | | | 60 | 0 | 80.83 |
| | | | 70 | 0 | 98 |
| | | | 75 | 11 | 75-89 |
| | | | | | Nine—93-98 |
| Hartsville Fert. Co., Hartsville | 13 | 1 | not given | .... | 56 |
| | | | | | Seven—60-69 |
| | | | | | Four—73-75 |
| | | | 50 | 1 | 61 |
| Royster (F. S.) Guano Co., Norfolk, Va. | 30 | 28 | not given | .... | 76.81. |
| | | | 33 1-3 | 0 | 80 |
| | | | 50 | 0 | 78.86.86. |
| | | | 75 | 21 | 72-89 |
| | | | | | Two—95 |
| | | | 85 | 1 | 96 |
| Sea Coast Fert. Co., Augusta, Ga. | 11 | 11 | 33 1-3 | 0 | 54 |
| | | | 50 | 2 | 61.62. |
| | | | | | Seven—69-79 |
| | | | | | 90 |
| So. Cotton Oil Co., Charleston. | 16 | 15 | not given | .... | 62 |
| | | | 33 | 0 | 58 |
| | | | 50 | 4 | 46-62 |
| | | | | | Four—73-79 |
| | | | 60 | 2 | 63.70. |
| | | | | | 77.82.94.95. |
| So. Fert. & Chem. Co., Savannah, Ga. | 32 | 29 | not given | .... | 66.80.82 |
| | | | 50 | 2 | 54.57. |
| | | | 60 | 4 | 55.59.62.64. |
| | | | 75 | 23 | Thirteen—70-79 |
| | | | | | Ten—80-88 |
| So. States Phos. & Fert. Co., Savannah, Ga. | 13 | 7 | not given | .... | Four—66-77 |
| | | | | | 81.84. |
| | | | 50 | 2 | 58.60. |
| | | | | | 66.67. |
| | | | | | Three—77-80 |
| Int. Agri. Corp., Spartanburg | 13 | 12 | not given | | 97 |
| | | | 50 | 2 | 61.63 |
| | | | | | Four—66-68 |
| | | | | | Three—73-77 |
| | | | | | Three—80-83 |

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| Name and Address of Company | No. of Samples | No. Sam- ples Guar- teed. | Water- Sol. Guar- teed. | No. Pass- ed. | Found per cent. |
|--|-------------------|---------------------------------|---|--|--|
| MacMurphy Fert. Co., Charleston | 18 | 14 | not given 50 | 4 | 67.72.74.92. 57.59.62.63 Six—66-79 Three—81-84 97 |
| Maybank Fert. Co., Charleston | 10 | 10 | 50 65 | 2 2 | 50.65. Two—73.74 Four—82-89 67.71 |
| Merchants Fert. & Phos. Co., Charleston..... | 25 | 18 | not given 40 45 50 60 62 1-2 70 | 0 0 0 0 0 2 | Five—80.86 72.93. 74 68 Two—72 Four—84-88 80.88. Four—86-95 83.85 92.93 |
| Molony & Carter Co., Charleston | 20 | 19 | not given 50 | 7 | 68 Seven—49-65 Eight—68-79 Three—82-85 19. |
| Navassa Guano Co., Wilmington, N. C. | 14 | 11 | not given 75 | 3 | 85.86.88. 82.83.86 Eight—92-97 |
| Ober (G) & Sons Co., Savannah, Ga. | 12 | 11 | not given 33 1-3 | 0 | 74 64 Ten—70-80. |
| Peruvian Guano Corp., Charleston, | 11 | 11 | 60 75 | 2 5 | 6. 1. 94.17. 84.85.85.90.90 92.96. |
| Planters Fert. & Phos. Co., Charleston | 27 | 26 | not given 70 | 21 | 71 Five—61-70 Sixteen—70-85 Three—86-78 95.99 |
| Read Phos. Co., Charleston | 32 | 30 | not given 50 | 9 | 54.63 36.65 Twenty—66-83 95 |
| Reliance Fert. Co., Savannah, Ga. | 16 | 14 | not given 50 60 | 0 1 | 66.74 Six—69-75 85.95 72 Five—77-83 |

| | | | | | |
|--|----|----|-----------|------|----------------|
| Sumter Fert. Mfg. Co., Sumter | 34 | 34 | 50 | 1 | 36 |
| | | | | | 69 |
| | | | 70 | 30 | Six—58-65 |
| | | | | | Eleven—70-79 |
| | | | | | Thirteen—80-86 |
| | | | | | 91 |
| | | | 75 | 1 | 88 |
| Swift & Co., Chester | 38 | 28 | not given | .... | 57.69-91 |
| | | | | | Three—73-74 |
| | | | | | Four—80-88 |
| | | | 50 | 1 | 65 |
| | | | | | Four—81-84 |
| | | | 60 | 2 | 74.74 |
| | | | | | Seven—79-85 |
| | | | 70 | 7 | 74-85 |
| | | | | | Six—87-90 |
| | | | 75 | 0 | 92 |
| The Carolina Chem. Co., Columbia,..... | 14 | 14 | 50 | 2 | 56.65 |
| | | | | | Nine—69-75 |
| | | | | | Three—85-88 |
| V. C. C. Co., Charleston | 72 | 66 | not given | .... | Six—80-90 |
| | | | 60 | 0 | Seven—88 |
| | | | | | Six—91-98 |
| | | | 70 | 1 | 85 |
| | | | 75 | 27 | Five—66-77 |
| | | | | | (22)—80-90 |
| | | | | | (22)—90-99 |
| | | | | | 59 |
| | | | 85 | 2 | 97.99 |

While the figures in the foregoing table speak for themselves, it is noteworthy, as was the case last year also, that where the guaranteed water-soluble was below fifty per cent the greatest discrepancies between the found and the guaranteed water-soluble ammonia equivalent of nitrogen appear. It is worthy of special comment, and commendation, that so large a number of the companies guaranteed so many of their samples, and the results indicate that they are making a real effort to comply with the law, as shown by the following comparison of last season with this year: Last season out of the 20 companies of whose goods we had ten or more samples, 69.13 per cent, or 262 out of a total of 379 samples were guaranteed, though only two companies out of the twenty guaranteed all of their samples; while this season 87.87 per cent of the samples of the 30 companies of whose goods we had ten or more samples, or 624 out of a total of 710 samples were guaranteed in water-soluble ammonia equivalent of nitrogen, and six of the companies guaranteed all of their samples.

The nitrogen availability standards for the coming season are the same as they have been for the past eight years, and are as follows:

1st. The Modified Street Neutral Permanganate Method is still in force.

2nd. An unmixed fertilizer material furnishing organic nitrogen must show an availability of 85 per cent of the total organic nitrogen found on analysis.

3rd. The water-insoluble organic nitrogen in mixed fertilizers must show an availability of 75 per cent by Street's method, if this water-insoluble organic amounts to one-third or more of the total nitrogen found on analysis.

Of the 868 mixed ammoniated fertilizers examined for water-soluble ammonia, 130 samples were found to contain water-insoluble organic nitrogen amounting to one-third or more of the total nitrogen found on analysis. All of these 130 samples were examined by Street's method, and were found up to the requirement of 75 per cent availability. Last season there were 120 samples out of 523, and all found up to the requirement. The results indicate that the shortage of organic ammoniates, noted for the past two or three years, still persists.

Farmers' Samples of Fertilizers—In addition to the official fertilizer samples collected by inspectors, there have been analysed this season 146 samples for purchasers, as provided for in Section 17 of the new fertilizer law, effective July 1st., 1920. This is three times as many as were received for analysis last season.

Waters—Of the forty-eight samples of water listed, eleven were sanitary analyses of the Barracks spring and eleven of the stand-pipe water, college water supply, regular monthly analyses. We were not able to get samples at the usual time in August 1922, as the water was cut off. Twenty-five of the forty-eight samples were sanitary analyses for citizens of the State, and the remaining sample was a complete mineral analysis for a citizen of the State.

Ores, Minerals, Etc—Thirty-eight specimens of clays, micas, quartz, iron pyrites, etc, were received and examined this season as compared with forty-seven last season.

Limestone, marls, and lime—Six samples of materials of this nature were analysed this season as compared with the same number last season.

Assays for gold and silver—Six samples were assayed this season as against eight last year.

Ashes (wood, etc)—Six samples of ashes were analysed this season as compared with one last year.

Miscellaneous—The twenty-one samples listed under this head consisted of: five samples of fertilizers checked for other laboratories; four samples of U. S. Government nitrate of soda, without guarantee, analysed for a citizen of the State; two samples of denatured alcohol; one each of: peat; velvet beans and pods, ground; glass sand; copper

ore; tobacco dust; compost; fertilizer for potash only; water for oil; and whiskey in case of suspected poisoning of a human being; as provided for by the laws of the State; sea-water.

Distribution of the Work—The fertilizer analyses were made by Messrs. Robertson, Foy, and Freeman, including the preparation of the samples for analysis, until they became so numerous as to require an additional helper to assist in grinding samples.

All of the nitrogen work, including total, water-soluble, and availability determinations, was done by Mr. Robertson.

With the exception of two analyses made by Mr. Foy, all of the water analyses were made by Mr. Freeman.

Mr. Freeman made the analyses of the limestones and like materials, the assays for gold and silver, and the miscellaneous analyses, with the exception of the analysis in the poison case made by Mr. Robertson, and of the two samples of denatured alcohol examined by Prof. Mitchell. Mr. Freeman also is to be credited with most of the work of sampling fertilizer samples for analysis, and devised a very ingenious and useful table for the purpose.

It gives me pleasure to be able to say that all of the work has been faithfully and efficiently performed, and that a spirit of loyalty and co-operation characterized the year's work.

Respectfully,

R. N. Brackett, Chief Chemist.

Report of the State Entomologist

Dr. W. M. Riggs, President, Clemson Agricultural College,
Clemson College, S. C.

Dear Sir:

We submit herewith the annual report of the work of the South Carolina State Crop Pest Commission for the fiscal year ending December 31, 1923. Covering the following:

Nursery Quarantine.

Sweet Potato Quarantine.

Cabbage and Tomato Regulations.

Insecticide and Fungicide Act.

Plant Diseases.

Boll Weevil.

Recently Introduced Pests: Mexican Bean Beetle, Argentine Ant, and Mole Cricket .

Our First Line of Defense: Sweet Potato Root Borer, European Corn Borer, and Pink Boll Worm.

New Pests: New Disease in Greenwood, and New Insect Pest at Piedmont.

Bee Disease Act.

Organization.

NURSERY QUARANTINE

—The enforcement of the revised nursery regulations showed a marked improvement in both the inter-state and intra-state movements of nursery stock. Nurserymen and dealers in such plants generally classed as nursery stock, took much interest in designating acceptable proxies in the state of South Carolina to represent them in all legal matters liable to come up in connection with their business. In some cases individual nurseries arranged for their respective representatives, but the Southern Nurserymen's Association made the unique arrangement for providing the appointment of an acceptable person within this state to represent them in all legal matters that required attention. This representative would take care of all matters involving any one or more members of the Southern Nurserymen's Association. The designation of an acceptable person to serve as proxy enables this Commission to proceed against any individual or organization living outside this state, when they have violated our laws by shipping in infested stock or stock that is not true to name, or by transporting plants that are in an unsound condition.

These new requirements had the effect of stimulating nursery activities within this state. The importance of this result can be readily appreciated when we recall that in the past South Carolina produced practically none of her own nursery stock, almost all the

materials planted from year to year having been imported from other states. It is obvious that this presented a most difficult condition under which to render effective quarantine service, as there is much greater danger from pests being shipped into the states than there is from transporting injurious insects or diseases from nurseries located within this state and which are subjected to a number of inspections each year.

Owing to the many varied insects and diseases that menace nursery stock of all kinds it is not possible in every case to determine on the best method of procedure without some delay. Frequently in the early stages insects or diseases are difficult to identify, while in other instances diseases or insects in a well developed condition demand some time on the part of the inspector for proper disposition.

In some cases it is necessary to refer materials to recognized specialists in various parts of the country. This in a few instances had delayed decisions on the part of the officers of the Commission, and while this sometimes appears embarrassing, it must be conceded that it is the only procedure consistent with safe quarantine service.

In the nursery inspection work several cases of crown gall were encountered. In one case where this disease was found to a limited extent in a nursery a thorough and careful detailed inspection was made of the nursery stock and premises and the plants which were free from the disease and which had not been exposed to the infection were passed for sale, and all infected plants and those exposed to infection were condemned. In support of the apparent wisdom of this policy we will refer to one case where a large shipment of plants had come in from another state and some of the plants had the appearance of crown gall, yet did not show any definite symptoms of this disease. Specimens were taken for detailed study and investigation by this Commission, while other specimens were sent to specialists of the United States Department of Agriculture where further determinations were made. This was a shipment of peach trees and involved a large investment on the part of growers in the eastern part of the state who were planting large areas in orchards. After thorough investigation it was found that the trouble was not due to crown gall and the officers of the Commission advised that all vigorous healthy looking trees be planted. These trees have now made one season's growth and are very vigorous and healthy.

In another case an unusual situation developed in connection with the introduction of a new variety of pear into this state for commercial planting. Inspection of one of the plantings of this pear indicated the presence of blight, and since the variety was supposed to be immune to blight, it was deemed advisable to make a thorough investigation of the matter. A careful study was made of the affected trees in our laboratories and specimens were sent to pathologists who have made a special study of apple and pear blight and the organism which causes these diseases in other states.

It was the consensus of opinion of the pathologists here and elsewhere that this trouble was not due to pear blight, and there is every indication therefore that the resistant variety is retaining its immunity under the conditions prevailing in this state.

The Crop Pest service is essentially based on a partnership between the people of South Carolina and the State Crop Pest Commission. Its outstanding policy is that of helpfulness, and whenever there is any possible opportunity to prevent loss to the individual or to the community by treatment, or otherwise, such service is always given. This policy has also led to a supervisory attitude on the part of the officers of the Commission over various nurseries, this being done in co-operation with the owners. Thus, if a case of root louse is discovered, the trees are not destroyed, but are given recognized and effective treatment before they are shipped.

The Commission continues the numbering of all permits and requires the filing of duplicate invoices of all shipments transported within or into the state. This procedure has the great advantage of enabling the Commission to locate quickly the probable points to which infested material may have been shipped whenever a nursery has come under suspicion. The year therefore in nursery activity has been marked by increased business and by material growth in a number of our best nurseries. The holding of the nurserymen responsible for infested plants, as well as for the correctness of varieties and soundness of stock, is reestablishing confidence which in many cases had been utterly destroyed by unscrupulous tree agents, and this will have the effect of developing this industry in this state to the importance it demands.

SWEET POTATO QUARANTINE

Our campaign against destructive diseases of the sweet potato, begun some years ago when the protective regulations were first adopted, has been vigorously prosecuted. For our supply of sweet potato plants we were dependent on other states, preeminently Georgia and Florida. Due to the fact that in many cases destructive diseases were transported into this state we continued to tighten up our quarantine until we have reached the point where three successful annual inspections are required before permits for transporting the plants are issued. One of these inspections is made in the field while the potato vines are still growing, and it is at this time that stem rot and other destructive diseases of the plants are most readily detected. The second inspection is made of the potatoes in the storage houses, and is for the purpose of catching diseases of the roots and tubers. The third inspection is made of the plant bed when the plants are ready to pull. At this time it is comparatively easy to detect diseases which would be carried on the plants.

Through news articles, as well as with the assistance of county agents, and the sweet potato association, we have kept the people

advised as to the necessity for purchasing only potato plants which have been certified by the State Crop Pest Commission. Our requirements as to inspections have practically eliminated those states from which infested shipments were heretofore received, from shipping plants into South Carolina this season. Some states were not able to meet these requirements, notwithstanding the fact that ample time had been given to make the necessary adjustments before exacting strict compliance. Although this reduced the number of inter-state shipments, it had no bad effect on our plantings because the deficit thus created in inter-state movements was more than offset by the increased production in this state.

CABBAGE AND TOMATO REGULATIONS

The inspection of cabbage and tomato plants grown for sale and distribution in this state was continued. Among the diseases frequently transmitted with these plants are root knot, wilt and leaf blight of tomatoes, and it is only by maintaining careful inspections of the beds where these plants are grown for sale that the general dissemination of these diseases can be prevented.

There were issued during the past fiscal year the following permits for transporting sweet potatoes for propagating purposes, 21,430; for transporting nursery stock, 62,000; cotton seed, 40,457; labels, (for mail orders) 8,100; for the transportation of queen bees, 350; special permits, 250; total, 132,587.

THE INSECTICIDE AND FUNGICIDE ACT

Owing to the ever increasing demand for insecticides and fungicides, and especially due to the adoption of calcium arsenate as a poison for the Mexican cotton boll weevil, a great many new materials came on the market. Entomologists were quite familiar with the behavior of at least most of the various ingredients used in making up these proprietary mixtures, but when they were put on the market under some "catchy" fictitious name they found ready sale even at fabulous prices.

The last session of the General Assembly created an Act to regulate the sale and distribution of insecticides and fungicides within the State of South Carolina and delegated the administration of this Act to the South Carolina State Crop Pest Commission. This Commission was authorized to make the necessary rules and regulations for carrying into effect the intent and purpose of this law, and the rules and regulations now in force are appended to this report.

The satisfactory administering of this Act presented a most difficult problem. The cotton belt, especially the South Atlantic section, abounded in propagandas looking toward the sale of various kinds of concoctions and preparations, some of which at least were based on a "get-rich-quick" idea. Every farmer, it seems, got into experimenting notions, but being handicapped in his facilities this resulted

in much misunderstanding and disagreement as to the results obtained and the comparative merits of the various materials used.

Probably the most important work done under this Act consisted of preventing large amounts of bad calcium arsenate from reaching the farmers. The law provides that calcium arsenate have certain specifications, the enforcement of which was provided for in the regulations. The determinations of these specifications were based on generally acknowledged methods and procedures. Numerous samples collected either by agents of the Commission or sent by parties thruout the state were examined in the laboratory of the state chemist. We came in touch with additional material thru complaints received from farmers to the effect that their machines would not satisfactorily dust the calcium arsenate which they had purchased. Investigations of such complaints in most cases showed that the trouble was not with the machine but with the physical condition of the calcium arsenate which was such that no dusting machine could dust it. The physical condition of calcium arsenate is of the utmost importance in determining its dustability through approved dusting machines. Methods had been developed for arriving at the physical condition by determining the density of the material in cubic inches per pound. In some cases however the dustability of the material does not correlate with the results obtained by the use of generally recognized methods for determining density. The regulations provide that the density shall not be less than eighty nor more than one hundred cubic inches per pound, and yet in some cases where materials came well within these extremes by the recognized method of procedure they were not dustable. Prompt decision and quick action was absolutely imperative to prevent both the material reaching the farmer, as well as delays in important dusting schedules. It certainly appeared obvious that it must have been the intent and purpose of the law that these materials purchased should be dustable, and furthermore that this must have been the understanding on the part of the purchaser and the seller when the transaction was completed. In order to prevent much loss and disappointment to the farmers and business men, this Commission condemned all shipments wherever the material failed to dust satisfactorily through machines of recognized merit.

The year's experience has furnished much information as to the grades of calcium arsenate and the methods of manufacturing. The batches and lots containing the bad shipments were well rounded up thruout the state, and as that portion of the defective material that was sold before these shipments were discovered was used mainly in the making of sweetened poison, we believe that in the aggregate very little harm was done.

Of the three hundred and forty-seven samples of calcium arsenate examined by the Department of Chemistry, thirty-one were more or less deficient in the arsenic content, and forty-five failed to comply

with the density requirements. Upon examining these records it is most interesting to note that the majority of failures in complying with the requirements occurred at the beginning of this service. The deficient material rapidly decreased, and during the latter part of the year few samples were found that did not meet all the requirements of the law.

PLANT DISEASES

From the standpoint of diseases more attention was given to sweet potato than any other crop. This was amply justified by the fact that South Carolina is rapidly developing into one of the important sweet potato-growing states. There is at this time every reason to hope that this industry will go forward rapidly, provided we can succeed in preventing the introduction of the destructive diseases that jeopardize this crop in other sections of the country.

During the past several years stem and soil rot have been brought into this state on plants shipped from other states. Every effort has been made to locate these infested spots and the ground is planted to other crops. The elimination of sweet potatoes from these infested areas will be continued until the diseases are eradicated. Stem rot must be regarded seriously as it has shown itself a very destructive disease in other states where it causes enormous losses.

The results of this service are becoming manifest in that the more or less common diseases of sweet potatoes, including black rot, scab, dry rot and soft rot, are less prevalent than they were. In the prosecution of this work the pathologists enjoy at all times the splendid co-operation of the growers.

BOLL WEEVIL

The conditions for the successful wintering of the boll weevil were favorable. This being the fifth comparatively mild winter, it is quite evident that the pest should have had ample time to develop maximum strength. Wintering was normal, as shown by hibernation records, as well as infestations appearing in the fields during the spring. The lateness of cotton, combined with the number of weevils active in the field in early spring, certainly did not give the cotton growers any good reason for feeling optimistic about the season of 1923. Infestations rose rapidly, so that by early summer some of the earlier planted fields had become heavily infested—as high as fifty-five to sixty percent of the squares having been punctured. The dry weather set in in early July and continued for a period varying practically from five to eight weeks, during which time the infestation continually decreased and enabled farmers to make fair crops on fields that had appeared hopeless. The dry weather of the past season was a very clear demonstration of the advice so frequently given that the boll weevil and dry weather do not agree. Tho very great

activity was shown in the use of various kinds of control measures, ranging from traps to large traction dusters, and from sweetened poison to calcium arsenate dust, yet in many fields satisfactory crops were made without the use of any poison whatsoever. These phenomena are not new to weevil students, and have been observed time and again heretofore. When it occurs in comparatively new weevil territory, like South Carolina, it has a tendency to mislead the farmer who is inclined to the erroneous conclusion that cotton can be made under boll weevil conditions without special effort. While it has been known that little poison would be necessary during dry, hot seasons, it should not be forgotten that if the season of 1923 had been moist the damage done by boll weevil might easily have been disastrous.

RECENTLY INTRODUCED PESTS

Mexican Bean Beetle: The distribution of this newly introduced pest extends over the northwestern part of the state southward to a line extending from Abbeville through Roebuck and through a point twelve miles northwest of Gaffney. When this pest first reached the Southeast in 1919 from some state of the West, presumably Colorado, it had a most threatening aspect, and its rapid distribution during its first two years after its appearance at Birmingham made it appear as tho it would quickly put into jeopardy the leguminous crops in southern agriculture.

At this time a rather careful study of the distribution of the pest makes it apparent that it develops its greatest activity in the foothills and mountain sections of this state. It is much more destructive in the higher altitudes, suggesting that the insect prefers the colder climates. According to present appearances the pest will spread over the entire eastern part of the United States and ultimately throughout the entire country. In co-operation with the Experiment Station, research work is being conducted with a view of determining an effective and economical method for controlling the pest in the field and in the garden.

Argentine Ant: This pest, reported at some length in several of our previous annual reports, is distributed thruout Charleston and adjacent territory. Altho it has not been possible to make systematic inspection at other points, it is more than likely that this pest has appeared in at least some of the other leading cities of the state. While no method for the complete eradication of the pest has so far been devised, the treatment recommended by the Bureau of Entomology having been tried in various campaigns thruout the South, appears to hold the pest effectively in check. It does not appear clear how quarantine methods could be applied to be of service against this pest, and it seems to resolve itself into a matter of

Argentine ant campaigns organized and conducted by corporations and communities.

Mole Cricket: The mole cricket has become a pest thruout the coast and near-coast counties. With its propensities for burrowing, due to its well adapted front feet, as well as its prolificacy, the pest is capable of creating great havoc to seed beds. The injury seems to be of an indirect nature. It becomes active at night, having its playground, so to speak, in the first inch of soil. These insects break up the earth with a degree of efficiency that could hardly be paralleled by any farm tool known at the present time. Regardless of the condition of the soil, it stirs it with equal efficiency, whether it be the sofe, pulverulent soil in the gardens of the commercial trucker, or the hard, bare, baked ground about railroad tracks. Altho quarantine measures are not feasible, various control measures have been worked out in the meantime that vary in efficiency. The following mixture recommended by Mr. W. A. Thomas, of the Bureau of Entomology, after a number of experiments in the Charleston area, appears especially promising.

| | |
|------------------------|----------|
| Cotton Seed Meal | 100 lbs. |
| Rice Flour | 200 lbs. |
| Calcium Arsenate | 15 lbs. |

This mixture is moistened with a molasses solution made of one part of molasses to ten parts of water. The first three ingredients are thoroughly mixed dry and then sufficient molasses solution added to moisten to a crumbly mass, but not enough should be added to make it sloppy.

This is applied lightly in rows five feet apart or every other cabbage row. Use about one hundred pounds to the acre. Rain following immediately after applications destroys its effectiveness and must be repeated. One application is attractive for a period of seven to ten days—if crickets are still abundant it should be repeated. It has generally been found that not over three applications are required.

OUR FIRST LINE OF DEFENSE

The approach of our most serious pests in other states is continually being contested.

Sweet Potato Root Borer: In the eradication of the sweet potato root borer the states and the federal government are co-operating. The eradication work undertaken several years ago is making continual progress and is being prosecuted in the states of Mississippi, Alabama, Georgia and Florida. The work in the Baker-Charlton County area of North Florida and South Georgia is progressing favorably. This is of special interest to this state, as it is the point nearest us, while the largest numbers of shipments of sweet potato slips have been coming to us from Georgia and Florida. This area

receiving the greatest concentration of effort at this time, will no doubt be the first to be free from the pest. The only active area in Alabama appears to be a small fishing settlement on the gulf and is unimportant as a commercial producing area. So far, no specimens have been discovered in this state and we feel a practical certainty that the pest has not reached South Carolina.

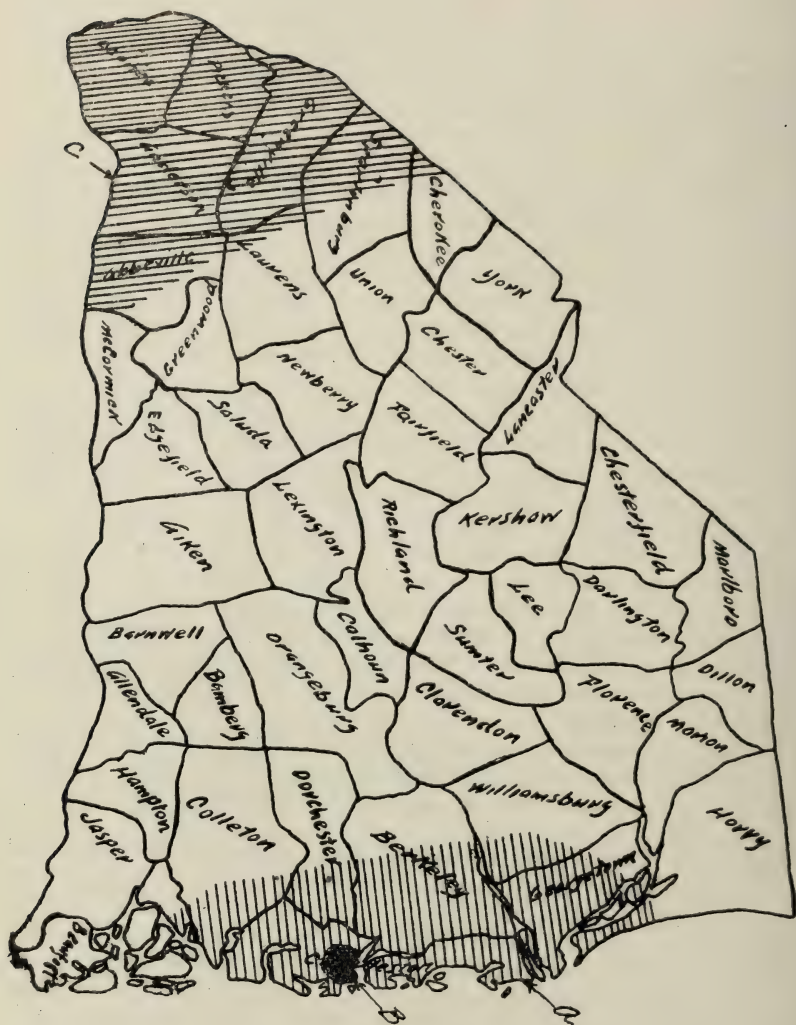
European Corn Borer: The invasion of the European corn borer from the North is being stubbornly and relentlessly contested. During the last year its spread in Ohio, Pennsylvania and New York has been comparatively light with no apparent intensification in New York and Pennsylvania. The only notable intensification occurred in some restricted localities in Ohio. This occurred in a territory immediately adjacent to Toledo along the Maumee River, the greatest infestation having reached fifteen to seventeen per cent. of the stalks in some fields. The commercial injury to the crop however at that point is negligible so far.

In the New England belt where the infestation is older, the situation continues most serious. Marked injury occurs to various garden crops, including sweet corn, celery, beans, beets, etc. It is spreading northward into New Hampshire and Maine and has reached Rhode Island, while Connecticut and Vermont are still free.

On the western and southern line of distribution valuable work is being done by the representative states. Besides the quarantine measures now in force the state of Ohio, in co-operation with the federal government, is prosecuting extensive clean-up campaigns in order to reduce infestation. Efforts are made to induce farmers to destroy old stalks and stubble and to utilize as much of the corn for silos as it is possible.

Continued progress has been made in the introduction of parasites from Europe, and one of the most promising introduced this past year has established itself in eastern Massachusetts, and promises to be helpful.

The Pink Boll Worm: The splendid co-operation established between the Federal Horticultural Board and the various states, including South Carolina, is being continued. While the interest waxes hot in our own state in a boll weevil fight, we forget that another great battle against an equally serious cotton pest is in progress on the southwest border of the cotton belt. The progress made against the pink boll worm from year to year has been recorded in our annual reports ever since the introduction of this pest into the United States. It may be recalled from previous reports that this insect was established in Texas in 1917. It was discovered that several shipments of Mexican cotton from pink boll worm-infested territory in Mexico had reached South Carolina mills. The work of this Commission, in co-operation with the Federal Horticultural Board, has been recorded in several previous reports, and at the present time it may be regarded as practically certain that South



A—European Mole Cricket; B—Argentine Ant;

C—Mexican Bean Beetle.

Carolina escaped, due no doubt, primarily, to the very severe winter of 1917-18.

In looking westward and taking a bird's eye view of the problem, we find that the two infestations extending over considerable area in Louisiana, and which had such a threatening aspect several years ago, have now, by eradivative measures prosecuted by the states and federal government, been brought under control—no active infestations having been found in that state for a period of over two years. Examining the four infested areas of Texas, it is noted that in one of the areas careful and systematic inspections have not disclosed any specimens in five years. In some of the other areas no specimens have been found for a period of two years. The only infestations remaining occur in certain isolated districts in west Texas and New Mexico, but local and quarantine measures now in force will practically eliminate any chance for the pest to spread to any other parts of the cotton belt, notwithstanding the fact that in the Rio Grande districts and Pecos Valley, the state, as well as the local planters, were reluctant in approving any determined efforts at eradication on account of the continuous possibilities of reinfestation from nearby Mexican points.

This constitutes the greatest and most important piece of entomological quarantine and eradication work ever undertaken, and the progress made should convince one of the efficiency of quarantine service properly administered. It seems at this time that the complete eradication of this great cotton pest from our cotton belt is practically assured, and represents the greatest and most important piece of insect control work in the history of the world, the benefits of which should easily appeal to every thinking person of the cotton belt who will stop and get a full conception of the disastrous results that would have followed the successful invasion by the pink boll worm.

NEW PESTS

Diseases: Among the new diseases encountered this year in our work in this state we encountered one which has never before been reported in this country. This was found on beans in Greenwood County, and seems to be quite serious where snap beans are grown for market. This disease is under investigation now, and if it is found advisable, regulations will be promulgated establishing quarantine for the purpose of keeping it in check.

Insects: At one or two points in the Piedmont section sweet potatoes were injured during the last several years by means of some grub boring thru them. Altho the work plainly showed that it was not that of the sweet potato root borer, we have so far been unable to find the insect in action. A short time ago we discovered what we suspect to be the grub, or young stage, of one of the cucumber beetles known as *Diabrotica balteata*. It appears that we have here

a new insect added to the list of those that must be watched and controlled from year to year. This subject is receiving especial attention at this time with a view of adopting such measures as may be necessary to prevent a spread of the pest, while experimental work for the purpose of developing control measures has also been undertaken.

THE BEE DISEASE ACT.

South Carolina is rapidly developing her beekeeping industry and so far holds the unique distinction that none of the serious and destructive brood diseases have been found within her borders.

These diseases occur in all of her neighboring states, which makes the situation especially threatening. A careful watch is kept on the movement of beekeepers' supplies, as well as on bees, honey and queen candy shipped into the state. Every possible safeguard is thrown around our bee yards thruout the state, especially the queen-rearing yards, with a view of preventing the spread of one or the other of these diseases, should they obtain a foothold.

ORGANIZATION.

There was no change in organization during this fiscal year. The position of Assistant State Pathologist remained vacant, as we were unable to find a suitable man for the salary available. The pathological work therefore was taken care of largely by the pathological staffs of the College and Experiment Station, with the assistance of the assistant state entomologist. This has necessitated calling upon the associate pathologist of the Experiment Station and the Extension Division to assist in inspection work.

Respectfully submitted,

H. W. Barre,

State Pathologist.

A. F. Conradi,

State Entomologist.

Report of the State Veterinarian

Dr. W. M. Riggs, President,
Clemson Agricultural College,
Clemson College, South Carolina.

Dear Sir:—

I have the honor of submitting herewith a report covering the activities of the Clemson College Livestock Sanitary Department and the Bureau of Animal Industry, U. S. Department of Agriculture, co-operating, for the period from January 1, 1923, to October 31, 1923, inclusive.

This Department is maintained for the protection of the livestock industry of the State and the principal function will be given under their respective headings.

TICK ERADICATION

The tick infested areas of the State are confined to the counties in the coastal plain region. As the stock-law is not being generally observed in these counties and our funds for conducting this class of work is limited, we have concentrated our efforts principally on premises and areas where the cattle were confined under fence. We also conducted the work in areas where the stock-law was not observed in order to protect certain areas that were free of ticks. With a few exceptions we met with very little opposition and satisfactory results were obtained, especially in those sections where the cattle were confined to the owner's premises, which enabled us to get all of them disinfected regularly.

It is to be regretted that a large majority of the owners do not grow sufficient food stuffs to carry their cattle through the winter months, and as soon as the crops are gathered the cattle are permitted to roam at will, many become tick-infested and reinfest the premises that have been freed of ticks the previous season. This accounts for the necessity of continuing the work year after year in such sections until the last tick has been eradicated.

We met with the greatest opposition in the Cottageville, Fire Hill, Big Bay and Salkehatchie sections of Colleton County. We prosecuted several cattle owners who wilfully violated the law, requiring the regular disinfection of their cattle, but were successful in obtaining convictions in only a small percent of the cases. Four of the convicted parties have appealed to the higher court and we regret to state are being represented by leading lawyers of the county. The lack of moral support on the part of the leading citizens of Colleton County is very deplorable and has always been a great drawback to the work in that county. If we do not meet with a better spirit of

cooperation next season we would deem it advisable to suspend the work entirely until such time as the cattle owners and citizens accord us their full support.

We have suspended the work in that portion of Berkeley County exempted from the provision of the Stock Law by the 1923 General Assembly and will not attempt systematic work in that area until the expiration of the exemption and the owners place their cattle under fence and assure us of their full cooperation.

The benefits derived from Tick Eradication are very apparent in all sections where the work has been completed. The farmers are paying great attention to the "breeding up" of their herds and the development of dairying in many sections is not only very noticeable but profitable. There are numerous purebred herds of both beef and dairy types in sections that could not have been maintained a few years ago on account of ticks.

TUBERCULOSIS ERADICATION

This class of work has been conducted in practically every county in the State during the past year, and is done at the request of the cattle owners. The Accredited Herd Plan feature is still carried out, but we hope to begin "Area Work" in the near future. By this we mean that the work will be taken up by counties, testing all cattle in each county and protect the areas by quarantine restrictions, similar to the method employed in Tick Eradication and in this way eventually free the entire State of bovine tuberculosis.

During the past twelve months we applied the tuberculin test to 2,164 herds containing 17,926 cattle, 128 of which reacted to the test and were disposed of according to State and Federal laws.

At the close of October 31, 1923, we have a total of 132 herds containing 4,434 cattle on the Tuberculosis Free Accredited Herd List; 731 herds and 7,511 cattle have passed one free test and a total of 3,682 herds containing 21,136 cattle are under our supervision in accordance with the requirements of the Accredited Herd Plan.

HOG CHOLERA CONTROL

The reduction in the number of Hog Cholera outbreaks during the past year was very marked. The sections where it was most prevalent being in the eastern and southern counties where the owners still permit their hogs to run at large during the greater part of each year. It is very noticeable that outbreaks are very rare in sections where the hogs are kept under fence throughout the entire year.

As a whole the farmers are not inoculating their hogs as a preventive against cholera to the same extent that they have in the past. For this reason we feel that outbreaks will occur during the winter months that would not if the preventive treatment were used.

During the past year 51,691 hogs were treated against cholera under our supervision.

OTHER DISEASES

The office being charged with the protection of the live stock industry of the State from contagious, infectious and communicable diseases, we answer numerous calls to all sections of the State to investigate and outline treatment of many diseases of all classes of live-stock that appear to be of a contagious or infectious nature.

The following is a summary of our activities during the past year in this line of work:

| | |
|---|--------|
| Number of diseases investigated in cattle | 159 |
| Number of diseases investigated in swine | 507 |
| Number of diseases investigated in horses and mules | 52 |
| Number of diseases investigated in sheep and goats | 6 |
| Number of diseases investigated in dogs | 119 |
| Number of diseases investigated in poultry | 3 |
| Farms or premises visited in making investigations | 5,192 |
| Interviews with farmers or others on matters pertaining to livestock sanitary work | 14,111 |
| Miles traveled by rail in answering calls | 48,329 |
| Miles traveled by other means in answering calls | 91,405 |

We also received numerous inquiries concerning conditions in live-stock that are handled through the medium of letters, bulletins, pamphlets, etc., from the Columbia office.

SERUM, VIRUS, AND BIOLOGICS DISTRIBUTION

A large supply of anti-hog cholera serum, hog cholera virus, and veterinary biologics is kept in stock and is furnished to the citizens of the State at cost. During the past year these products distributed were as follows:—

| | Mills | Value |
|------------------------------|-----------|-------------|
| Anti-hog cholera serum | 2,674,475 | \$27,623.44 |
| Hog cholera virus | 151,195 | 1,562.57 |
| * Biologics .....(doses) | 11,221 | 2,361.75 |
| Syrings, etc. | | 108.75 |
| Total | | \$31,656.51 |

* The biologics distributed were used for the prevention of hemorrhagic septicemia (cattle and swine), mixed infection (swine), black leg (cattle) and rabies (dogs).

LABORATORY

This important branch of our Department is rendering a wonderful service to the live stock industry of our State. Our equipment is modern in all details and permits us to make correct diagnoses of many conditions by bacteriological, pathological and serological ex-

aminations and tests that would otherwise be impossible.

While the laboratory has been in operation only two years yet 1,178 specimens have been examined during this period. For the past several months approximately 200 specimens have been examined monthly.

The value and appreciation of the service rendered is expressed in many letters from livestock owners and poultry raisers who followed the rational suggestions and treatment made by us.

SERVICE

It being our desire to render prompt and efficient service at all times to the livestock owners, we have an able corps of assistant state veterinarians located at Allendale, Columbia, Conway, Denmark, Georgetown, Kingstree, Marion and Walterboro. This force is augmented by twenty-six practicing veterinarians who are commissioned as Deputy State Veterinarians, and are located at advantageous points throughout the State, to assist us in the control and eradication of contagious and infectious diseases in their respective sections.

It will thus be seen that we have extended our service to every section of the State and are in position to assist in the control and eradication of any contagious or infectious conditions in livestock on very short notice.

This great service is not excelled by any State, in fact, very few states are rendering a similar service. It is all the more remarkable when we state the annual appropriation for maintaining this department is less than 1-10 of one percent of the total valuation of the livestock industry of the State, an industry that is of paramount importance in our agricultural development.

Force in Live Stock Sanitary Work

(Paid jointly by State of South Carolina and U. S. Dept. of Agriculture).

| Name and Title. | Address. |
|---|-------------|
| W. K. Lewis, Inspector in charge, and State Veterinarian, | Columbia. |
| L. S. Baer, Veterinary Inspector | Columbia. |
| Z. C. Boyd, Veterinary Inspector | Columbia. |
| P. J. Gallagher, Veterinary Inspector | Columbia. |
| Clarke Hedley, Veterinary Inspector | Conway. |
| E. E. Lent, Veterinary Inspector | Columbia. |
| J. R. Urich, Veterinary Inspector | Columbia. |
| M. L. Boyd, Assistant State Veterinarian | Walterboro. |
| H. S. Brundage, Assistant State Veterinarian | Georgetown. |
| E. T. Fisher, Assistant State Veterinarian | Columbia. |
| H. B. Hood, Assistant State Veterinarian | Kingstree. |
| W. D. McCormack, Assistant State Veterinarian | Conway. |
| R. A. Mays, Assistant State Veterinarian | Columbia. |
| F. K. Peterson, Assistant State Veterinarian | Columbia. |

| | |
|--|------------------|
| J. H. Rietz, Assistant State Veterinarian | Columbia. |
| S. D. Shoulkin, Assistant State Veterinarian | Allendale. |
| S. M. Witherspoon, Jr., Assistant State Veterinarian | Marion. |
| J. H. Yarborough, Jr., Assistant State Veterinarian | Denmark. |
| R. K. Donly, Clerk | Columbia. |
| George Smith, Clerk | Columbia. |
| Margaret Robertson, Steno-Typewriter | Columbia. |
| J. O. Ackerman, Assistant to Veterinarians | Cottageville. |
| A. M. Addison, Assistant to Veterinarians | Walterboro. |
| C. L. Anderson, Assistant to Veterinarians | McClellanville. |
| W. M. Barnwell, Assistant to Veterinarians | Youngs Island. |
| J. S. Baskin, Assistant to Veterinarians | Summerton. |
| H. F. Beach, Assistant to Veterinarians | Walterboro. |
| D. E. Benton, Assistant to Veterinarians | Walterboro. |
| R. B. Benton, Assistant to Veterinarians | Walterboro. |
| William Bivens, Assistant to Veterinarians | Ravenel. |
| J. M. Boyd, Assistant to Veterinarians | Conway. |
| G. S. Cuthbert, Assistant to Veterinarians | Summerville. |
| J. E. Gillis, Assistant to Veterinarians | Kingstree. |
| W. H. Harrison, Assistant to Veterinarians | Varnville. |
| J. C. Hoats, Assistant to Veterinarians | Walterboro. |
| W. H. Jones, Assistant to Veterinarians | Kershaw. |
| J. D. Limehouse, Assistant to Veterinarians | Summerville. |
| V. E. McCormack, Assistant to Veterinarians | Ridgeland. |
| M. B. Marvin, Assistant to Veterinarians | Beaufort. |
| S. H. Williams, Assistant to Veterinarians | Georgetown. |
| E. E. Wyndham, Assistant to Veterinarians | Bonneau. |
| W. D. Camlin, Agent in Tick Eradication, | Andrews. |
| W. G. Cantley, Agent in Tick Eradication | Kingstree. |
| J. Y. Clark, Agent in Tick Eradication | Eadytown. |
| M. V. Cox, Agent in Tick Eradication | Hemingway. |
| E. E. Driggers, Agent in Tick Eradication | Round. |
| B. A. DuBois, Agent in Tick Eradication | Frogmore. |
| H. L. Easterlin, Agent in Tick Eradication | Seabrook. |
| S. P. Elliott, Agent in Tick Eradication | Galivants Ferry. |
| E. W. Goodwin, Agent in Tick Eradication | Ritter. |
| H. C. Gore, Agent in Tick Eradication | Longs. |
| G. W. Hill, Agent in Tick Eradication | Ridgeville. |
| R. B. Hills, Agent in Tick Eradication | Edisto Island. |
| J. M. Hoats, Agent in Tick Eradication | Walterboro. |
| J. J. Jackson, Agent in Eradication | Awensdaw. |
| E. J. Jenkins, Agent in Eradication | Edisto Island. |
| J. C. Kinsey, Agent in Tick Eradication | Awensdaw. |
| Theodore Malphrus, Agent in Tick Eradication | Ridgeland. |
| J. P. Raymon, Agent in Tick Eradication | Hardeeville. |
| J. E. Riley, Agent in Tick Eradication | Okatis. |
| J. M. Rowell, Agent in Tick Eradication | Buffton. |
| W. B. Skilling, Agent in Tick Eradication | Bellinger. |

| | |
|---|-----------------|
| C. L. Crawley, Cattle Inspector | Hilton Head. |
| J. R. Hudson, Cattle Inspector | Hilton Head. |
| L. C. Lachicotte, Jr. Cattle Inspector | Brook Green |
| J. W. Mishoe, Cattle Inspector | Loris. |
| G. W. Pace, Cattel Inspector | Gresham. |
| W. T. Rowell, Cattle Inspector | Nichols. |
| C. C. Strobel, Cattle Inspector | Ridgeville. |
| G. F. Sullivan, Cattle Inspector | McClellanville. |
| W. M. Thompson, Cattle Inspector | Gresham. |
| B. H. Vereen, Cattle Inspector | Burgess. |
| W. C. Walker, Cattle Inspector | Pritchardville. |
| B. L. Walpole, Cattle Inspector | Johns Island. |
| O. T. Ward, Cattle Inspector | Seranton. |
| R. O. Williams, Cattle Inspector | Gresham. |
| F. H. Worthington, Cattle Inspector | Frogmore. |
| * J. E. Wilson, Clerk | Columbia. |
| * J. M. Lephart, Clerk | Columbia. |
| * J. E. Wilson and J. M. Leaphart, clerks, are paid out of Hog Cholera Control Reinvestment Fund. | |

TICK ERADICATION

U. S. Bureau of Animal Industry Expenditures

| | Salaries. | Incidentals | Total |
|-------------------------------------|-------------|-------------|-------------|
| Jan. 1, to Oct. 31, 1923, inclusive | \$34,187.66 | \$7,456.75 | \$41,734.41 |

Salaries: Expenditures under this heading include salaries of supervising veterinarians, a clerk and agents in tick eradication.

Incidentals: Expenditures under this heading include traveling expenses of surviving veterinarians, agents in tick eradication, and maintainance of office in Columbia. S. C.

State Expenditures.

| | Salaries. | Incidentals | Total |
|-------------------------------------|-------------|-------------|-------------|
| Jan. 1, to Oct. 31, 1923, inclusive | \$15,543.49 | \$2,358.41 | \$18,001.90 |

Salaries: Expenditures under this heading include salaries of cattle inspectors and one clerk.

Incidentals: Expenditures under this heading include chemicals (for preparing arsenical solution to disinfect cattle), utensils and containers for same, printing regulations, guarantee and permit books, disinfection notices, traveling expenses, etc.

LIVESTOCK SANITARY CONTROL WORK

U. S. Bureau of Animal Industry Expenditures

| | Salaries. | Incidentals | Total |
|-------------------------------------|-------------|-------------|-------------|
| Jan. 1, to Oct. 31, 1923, inclusive | \$10,234.43 | \$3,945.06 | \$14,179.49 |

SUPPLEMENTARY REPORTS

Salaries: Expenditures under this heading include salaries of five veterinary inspectors and one clerk.

Incidentals: Expenditures under this heading include traveling expenses of veterinary inspectors, office rent, telephone charges, etc.

State Expenditures.

| | Salaries. | Incidentals. | Total |
|-------------------------------------|-------------|--------------|-------------|
| Jan. 1, to Oct. 31, 1923, inclusive | \$26,183.30 | \$8,941.12 | \$35,124.42 |

Salaries: Expenditures under this heading include salaries of veterinarians and assistants to veterinarians.

Incidentals: Expenditures under this heading include traveling expenses of veterinarians, office rent, telephone and telegraph charges, office supplies, laboratory equipment, other equipment, supplies, etc.

The following statement shows expenditures from various sources from 1907 to October 31, 1923, inclusive:—

EXPENDITURES FOR TICK ERADICATION
IN SOUTH CAROLINA.

| Year | U.S.Dept. Agri. | Clemson College | State Appr. | County Appr. |
|--------------------------|--------------------|--------------------|----------------|-----------------|
| 1907 | \$ 5,125.00 | \$ 1,860.00 | ..... | ..... |
| 1908 | 15,207.00 | 4,535.00 | ..... | ..... |
| 1909 | 19,367.00 | 8,524.00 | ..... | ..... |
| 1910 | 15,915.00 | 9,960.00 | ..... | ..... |
| 1911 | 12,674.00 | 10,051.00 | ..... | ..... |
| 1912 | 14,537.00 | 8,308.00 | ..... | ..... |
| 1913 | 16,146.00 | 9,369.00 | ..... | \$1,083.00 |
| 1914 | 23,143.00 | 1,497.00 | \$29,994.31 | ..... |
| 1915 | 35,479.84 | ..... | 29,999.99 | ..... |
| 1916 | 38,598.72 | ..... | 30,000.00 | ..... |
| 1917 | 64,811.65 | ..... | 30,000.00 | ..... |
| 1918 | 74,102.77 | ..... | 29,997.50 | ..... |
| 1919 | 63,947.29 | ..... | 30,000.00 | ..... |
| 1920 | 35,650.36 | ..... | 20,000.00 | ..... |
| 1921 | 36,802.79 | ..... | 19,978.68 | ..... |
| 1922 | 50,290.34 | ..... | 19,669.61 | ..... |
| 1923 (To Oc . 31st)..... | 41,734.41 | ..... | 18,001.90 | ..... |
| Totals | \$563,532.17 | \$54,104.00 | \$257,641.99 | \$1,083.00 |

LIVE STOCK SANITARY CONTROL WORK

The following statement shows expenditures from the year 1918 to October 31, 1923, inclusive:—

| Year. | U. S. Dept. of Agri. | State Ap- propriation | Total |
|-------------------------|-------------------------|--------------------------|--------------|
| 1918 | \$ 3,243.81* | \$ 4,395.11 | \$ 7,638.92 |
| 1919 | 7,418.80* | 9,954.56 | 17,373.36 |
| 1920 | 13,325.56 | 30,000.00 | 43,325.56 |
| 1921 | 15,596.24 | 48,985.51 | 64,581.75 |
| 1922 | 16,725.02 | 47,538.94 | 64,263.96 |
| 1923 (To Oct. 31) | 14,179.49 | 35,124.42 | 49,303.91 |
| Totals | \$70,488.92 | \$175,998.54 | \$246,487.46 |

* These amounts do not include the U. S. Department of Agriculture's expenditures in hog cholera work in South Carolina for the year 1918, or the first nine months in 1919, as this office has no record of the expenditures made by the U. S. Department of Agriculture for hog cholera control work in South Carolina prior to October 1, 1919.

Respectfully submitted,

W. K. LEWIS,

Inspector in Charge, and State Veterinarian.

Report of the Auditor

LETTERS OF TRANSMITTAL

Clemson College, S C., Dec. 15, 1923.

Honorable Board of Trustees of the Clemson Agricultural College of
South Carolina.

Gentlemen:

I beg to transmit to you herewith an audit of the books, vouchers, and accounts of the Clemson Agricultural College for the fiscal year ending June 30th, 1923, as indicated by the body of this report. Mr. L. A. Searson acted as a representative of this department in actually making the audit

Yours very truly,

W. W. BRADLEY,

State Bank Examiner.

Hon. W. W. Bradley, State Bank Examiner,

Columbia, South Carolina.

Sir:

Pursuant to instructions, I have audited the books, vouchers and accounts of CLEMSON AGRICULTURAL COLLEGE as to receipts and disbursements, covering the period commencing July 1, 1922 and ending September 30, 1923. As a part of this audit, I have also witnessed and approved the transfer of funds from Mr. S. W. Evans, Treasurer to Mr. E. B. Elmore, Acting Treasurer (by direction of Dr. W. M. Riggs, President of the College).

Dated at Columbia, South Carolina, this 15th day of Nov. A. D , 1923.

Respectfully submitted,

L. A. SEARSON,

Certified Public Accountant.

Attest—

W. A. SEARSON, Secretary.

GENERAL REPORT

(Office of Mr. Sam'l W. Evans, Treaseurer)

General Comments:

The writer has been called upon on various occasions, since July 1, 1913 to conduct the annual audits of the books and records of this office. In submitting the reports in connection with such audits, it has been a pleasure to refer, without exception to the efficient methods employed by the Treasurer of Clemson College, in compiling the vital records which purport to show the financial structure upon which the institution has operated and progressed from year to year. There does not appear any occasion for change in the opinions expressed in my former reports, but I would like to call attention to some material facts which have been impressed upon my mind.

The continued growth of Clemson College as an institution of learning; as a physical plant; as an element in the financial program of the State and as the clearing house for an extensive and valuable plan of agricultural development and publicity, (fostered by the State and Federal Government) has had it's natural effect upon the accounting department. From the close of one accounting period to another, the work of the Treasurer's Office has grown with the times and with the progress of the College, until it is now, I believe, about fifty per cent greater than it was at the end of July, in the year 1913.

It is manifest, therefore, that the executive head of the department has had his problems in keeping pace with developments. In making these audits, from time to time, I have observed, with especial interest, that the Treasurer has met the emergencies and increases in business with careful planning and exact judgment. In a former report, I expressed the opinion that the clerical force was not adequat, and suggested that an additional utility clerk might be desirable. In this regard, I have had no reason to change my view—but, I desire to state that the work of the office has been none the less successfully carried out because of this fact.

The Board of Trustees, however, might do well to give careful thought to these things, viz: the elaborate analitical reports required by the Federal Government; the classified statements demanded by the South Carolina Budget Commission (differing from the College classification both in form and as to the fiscal period covered); the steady growth of the student body in numbers; the building program and various other features which call for additional work; better accounting facilities and greater effort on the part of the Treasurer and his force. The finances of the enterprise must be carefully and skillfully guarded—and I know of no other method by which your honorable body can continue to work out a sound future for the College, except through an accounting system which presents the cost and the facts in a clear

and impartial manner. With this as a basic principle, Mr. Evans has worked for a number of years (I have every reason to conclude,) and I would not feel that my work was complete without an expressed hope that he might be encouraged in every way to continue along this line.

It is evident that the unfailing interest, co-operation and sympathy of the President has been the Treasurer's greatest aid in maintaining the high standard of efficiency which the accounting department has shown. The President's remarkable grasp of the financial status of the institution, in its varied aspects, would indicate his careful and constant study of details, as well as the big problems which naturally confront him.

Transfer of Office—

It is necessary to explain that the Board of Trustees, at a recent meeting, decided to give the Treasurer, (Mr. Samuel W. Evans) a leave of absence, extending over a period of several months, because of illness. At the direction of the State Bank Examiner, (through President W. M. Riggs,) therefore, I have assisted in, and witnessed the transfer of funds, records, etc., of this office, to Mr. E. B. Elmore, Chief Accountant in the department. A transcript of the receipt given by Mr. Elmore to Mr. Evans, under date of October 1, 1923, is incorporated in this report. I feel sure that the long experience and the intimate knowledge of the general accounting methods of the office have fitted the acting Treasurer to fill the position in a highly satisfactory manner.

Books and Records—

The absolute accuracy of the Treasurer's accounts is convincing evidence that the work is not only handled with great care, but also that the Treasurer maintains an excellent system of checking, which enables him to locate discrepancies before his records are submitted for audit. I am pleased to state that I have no errors to report and no criticism to offer, except to suggest that an index to accounts transferred after the close of a fiscal year would facilitate the auditing work somewhat and would be generally desirable.

Especial attention is directed to the fact that every expenditure is covered by an itemized voucher, formerly approved by department and division directors and by the President of the College. These vouchers are filed systematically and are easily audited. (All purchases are made on requisition.)

Individual accounts are kept, giving a complete record of each student's transactions with the Treasurer's Office, from the date of matriculation. The student ledgers are very valuable and interesting books of account. A banking department is also provided for convenience of the cadets and a separate set of records, involving general banking principles, is kept in this connection.

The main ledgers, which give a detailed account of all college funds, public work, etc., present an interesting and elaborate classification of expenditures. Showing the cost of operation by the calendar year, as

well as by the fiscal year, ending June 30. In this connection, I take the liberty of suggesting that any appropriations made by the Legislature should apply to the Collegiate fiscal year. I note that the Treasurer is required to compile reports for the State Budget Commission, on a calendar year basis—and differing greatly from the standard classification upon which the college necessarily must operate. This condition is not only confusing, in my opinion, but it increases the work of the office to a large extent, without any material benefit. Having assisted the Treasurer in preparing the Budget reports, I feel that a statement in this regard might be in order.

Although the records appear to have been carefully preserved from year to year, it is nevertheless true, in my judgment, that the business of the College has outgrown the equipment and that better filing facilities and more office space should be provided to protect the important financial statistics.

In conclusion—

In a report of this nature it is hardly practicable to cover all the points which might impress the Auditor's mind. However, I have attempted to call attention to the most important matters and I trust that my efforts will meet with the approval of all concerned.

My audit of the various funds, accounts, vouchers, etc., for the period commencing July 1, 1922 and ending September 30, 1923, is fully explained through the statements and comments attached hereto.

CERTIFICATE OF TRANSFER

FUNDS OF CLEMSON COLLEGE, S. C.

From S. W. Evans, Treasurer to E. B. Elmore, Acting Treasurer.

The cash balance as shown by the books of Samuel W. Evans, Treasurer of Clemson College, in the aggregate sum of \$228,150.17 (duly audited and attested by Louis A. Searson, C. P. A.) is covered by the following bank balances, as of date September 30, 1923, close of business, to-wit:

| | |
|---|-----------|
| Farmers and Merchants Bank Anderson | 12,048.75 |
| National Bank of Sumter | 39,000.00 |
| Farmers Bank Abbeville | 22,000.00 |
| Peoples Savings Bank Abbeville | 15,000.00 |
| Union Savings Bank Bennettsville | 35,000.00 |
| Bank of Greenwood | 15,000.00 |
| The Fort Hill Bank, Clemson College | 3,00.00 |
| Commercial Bank, Greenwood | 15,000.00 |
| Bank of Pedleton (Int. Bearing) | 5,000.00 |
| Pickens Bank (Smith-Lever Fund) | 20,862.85 |
| National Bank of Newberry, (Smith-Lever). | 35,000.00 |

Bank Certificates\$216,911.60

SUPPLEMENTARY REPORTS

| | | |
|--|------------|--------------------|
| Bank of Pendleton (S.-L.) Bank certificate | 15,316.37 | |
| Less: Checks out | 6,343.82— | 8,972.55 |
| | | <hr/> \$225,884.15 |
| Deduct: Bank of Pendleton, General account | | |
| Bank Statement, overdraft | 28,710.57 | |
| Add: Checks out | 33,112.67— | 61,823.24 |
| | | <hr/> 162,060.91 |
| Office Cash, (as audited | | 64,097.26 |
| | | <hr/> |
| Net Cash (as per cash book) | | \$228,140.17 |

Receipt of the above described cash in banks is hereby acknowledged.
(Transfer of cash on hand and cash items in Treasurer's Office is
acknowledged in separate receipt attached hereto.)

Dated at Clemson College, South Carolina, this 8th., day of November, A. D., 1923.

E. B. ELMORE, Acting Treasurer.

Witness: L. A. Searson, Certified Public Accountant.

B. B. Burley, Bookkeeper.

CERTIFICATE OF TRANSFER

Transfer of Office Cash from S. W. Evans, Treasurer to E. B. Elmore,
Acting Treasurer.

At the close of business November 7, 1923, the office cash balance,
of Clemson College (as shown by the Treasurer's Cash Book) amounts
to \$20,055.60 (as audited.) This cash balance is covered by the follow-
ing described cash and cash items, to-witS

| | |
|---|-------------|
| National Currency and Legal Tender..... | \$ 1,601.00 |
| Silver and Minor Coin | 29.91 |

\$ 1,630.91

| | |
|--|----------|
| Post Office Money Orders | 124.70 |
| Current checks for deposit | 8,731.18 |
| Freight and express bills | 3,935.71 |
| Pay roll advances (labor and C.) | 8,487.14 |
| Traveling expense advances | 149.85 |
| Sundry cash items | 908.02 |
| Refunds to students | 1,076.60 |

\$ 25,044.11

Less—Bank of Pendleton—

| | |
|-----------------------------------|----------|
| Clearing account over-draft | 4,988.51 |
|-----------------------------------|----------|

Total cash and cash items\$ 20,055.60

Receipt is hereby acknowledged of the above described cash and cash items.

Dated at Clemson College, South Carolina, this 8th, day of November, A. D., 1923.

E. B. ELMORE, Acting Treasurer.

Witness:

L. A. SEARSON, Certified Public Accountant.

B. B. BURLEY, Bookkeeper.

REPORT ON COLLEGE FUND

Sources of Revenue—

The general revenues, for operation of the College amounted to \$246,112.06, for the fiscal year ended June 30, 1923. To this amount was added the cash balance of \$71,502.87, brought forward July 1, 1922; an appropriation of \$46,175.20, for the Collegiate Institute, and a loan from the State of South Carolina in the sum of \$150,000.00, making an aggregate of \$513,790.13, available for general college purposes. The general revenues include the Morrill and Nelson funds, received from the Federal Government and the fertilizer tax, which, as the principal source of income, amounts to \$169,717.53. It is interesting to note, in this connection, that the receipts from this source are \$99,000.00 less than in the year ended June 30, 1918 (five years ago) while the total actual revenues for the year are about \$79,000.00 less than they were years ago—principally due to the shrinkage in privilege fertilizer tax receipts. Which the gradual growth of the College and the loss of revenue as above stated, it is readily understood why the State assistance during the past fiscal year was necessary.

College Expenditures—

The condensed statement shows the general purposes for which the expenditures, aggregating \$364,878.80, were made. I have also compiled a classified statement showing the expenses by departments and by divisions, as compared with appropriations, for the year ended June 30, 1923.

CONSOLIDATED STATEMENT, RECEIPTS AND DISBURSEMENTS

(Fiscal Year Ended June 30, 1923).

College Fund—

| | |
|---------------------------------|--------------|
| Cash balance July 1, 1922 | \$ 71,502.87 |
|---------------------------------|--------------|

Income—

| | |
|------------------------------------|--------------|
| Balance on hand July 1, 1922. | \$ 71,502.87 |
| Privilege Fertilizer Tax | \$169,717.53 |
| Morrill and Nelson Fund | 25,000.00 |
| Interest on Landscap | 5,754.00 |
| Interest on Clemson Bequest | 3,512.36 |

SUPPLEMENTARY REPORTS

| | |
|---|---------------------|
| Tuition from Students | 14,815.97 |
| Rents | 13,121.01 |
| Matriculation and Laboratory Fees..... | 5,548.04 |
| Interest and Miscellaneous Receipts | 8,643.15—246,112.06 |

From Other Sources—

| | |
|--|------------------------|
| State Loan | \$150,000.00 |
| Appropriation for Collegiate Instruction | 46,175.20—\$196,175.20 |
| Total | \$513,790.13 |

Expenditures:—(Vouchers Audited).

| | |
|--|------------------------|
| Scholarships and Advertisements | \$13,889.79 |
| Fertilizer Inspection and Analysis | 27,085.62—\$ 40,975.41 |

College Operating Expenses—

| | |
|-------------------------------------|------------------------|
| Salaries | \$155,954.35 |
| Coal, Labor, Supplies, etc | 95,051.50 |
| Payment on Note | 11,284.21 |
| Interest on Note | 6,770.52—\$ 269,060.58 |
| Equipment for Teaching | \$ 15,815.53 |
| Permanent Additions and Improvement | 39,027.28—\$ 54,842.81 |
| Total | \$ 364,878.80 |

| | |
|--|---------------|
| Reserve on hand June 30, 1923, necessary to carry College during season of small Fertilizer sales, July 1 to January 1. | \$ 148,911.33 |
| Total | \$ 513,790.13 |

GENERAL STATEMENT OF EXPENDITURES

(Treasurer's Standard Classification, Year Ended)

June 30, 1923

| College Fund | Expenditures. | |
|--|----------------|--------------|
| Public State Work: | Divisional | Departmental |
| Scholarships and Advertisements | \$13,889.79—\$ | 13,889.79 |
| Fertilizer Inspection and Analysis— | | |
| Salaries—Chemists | 7,499.99 | |
| Chemicals | 500.00 | |
| Apparatus | 289.95 | |
| Gasoline | 386.65 | |
| Recordbooks, Postage, etc | 180.11 | |

| | | |
|--------------------------------------|-----------|-----------|
| Incidentals | 42.78 | |
| Labor—Janitor | 300.00 | |
| Extra Help in Lab'y and Office | 420.00 | |
| Emergency Supplies, Labor, etc | 589.10 | |
| Travelling Expenses | 63.64 | |
| Salaries Secty and Clerk | 4,000.00 | |
| Labor—Janitor (Fert. Inspt) | 600.00 | |
| Inspection Tags and Printing | 4,500.00 | |
| Pay & Travel of Inspectors | 6,669.50 | |
| Freight, Postage, etc | 457.40 | |
| Legal Services | 250.00 | |
| Fertilizer Bulletins | 336.50—\$ | 27,085.62 |
| | | <hr/> |
| Public State Work Expenditures | \$ | 40,975.41 |
| | | <hr/> |

COLLEGE WORK

ACADEMIC DEPARTMENT

| | Expenditures | |
|--|-----------------|--------------|
| | Divisional | Departmental |
| English Division— | | |
| Repairs | \$ 19.60 | |
| Stationery, etc | 9.87—\$ | 29.47 |
| History Division— | | |
| Periodicals for Class Use | 12.00—\$ | 12.00 |
| Mathematics Division— | | |
| Repairs | 18.86—\$ | 18.86 |
| Office and Unclassified Division— | | |
| Janitor (Upper floor) | 377.71 | |
| Office and Janitor Supplies | 144.11 | |
| Class Room Seats | 200.00—\$ | 721.82 |
| Physics Division— | | |
| Laboratory Supplies & Repairs | \$ 135.00 | |
| Apparatus for Mechanics and Heat..... | 139.57 | |
| Apparatus for Light and Sound | 63.61 | |
| Apparatus for Elec. and Magnetos..... | 175.19 | |
| Student Assistant | 63.74—\$ | 577.11 |
| Salaries— | | |
| Salaries—Professors and Assistants | \$ 32,816.59—\$ | 32.81 .59 |
| | | <hr/> |
| Department Expenditures | \$ | 34,175.85 |
| | | <hr/> |

AGRICULTURAL DEPARTMENT

| | Expenditures | |
|--|--------------|--------------|
| | Divisional | Departmental |
| Agricultural Education Division— | | |
| Trasportation of Students.....\$ | 138.67 | |
| Printing School Leaflets | 200.00 | |
| Lanterns Slides and Photos | 75.81 | |
| Office Furniture | 139.66 | |
| Laboratoy Equipment | 96.32—\$ | 650.46 |
| Agronomy Division— | | |
| Cement, Gasoline, Oil, etc.\$ | 199.45 | |
| Seed, Score Cards, etc | 61.86 | |
| Repairs and Parts for Machines | 29.10 | |
| Materials for class use | 194.07 | |
| Cement, Gasoline, Oil, etc | 68.84 | |
| Misc. Small Lab'y Equipment | 486.97 | |
| Office equipment, Files, etc. | 100.25 | |
| Equipment for Farm Mach. Lab'y | 799.49—\$ | 1,950.02 |
| Animal Husbandry Division— | | |
| Part salary-Herdsman | 500.00 | |
| Labor | 586.72 | |
| Repairs to Fences | 245.00 | |
| Expenses to Judging Contest | 49.21 | |
| Feed and Fertilizer | 2,207.06 | |
| Veterinary Service | 189.36 | |
| Registration Books | 50.50 | |
| Farm Tools | 449.80 | |
| Misc. Small Tools and Equipment | 372.82 | |
| Judging Pavilion | 108.00 | |
| Water Pipe for lots | 150.00 | |
| Labor for New Fencing | 299.27 | |
| Pasture Improvements | 240.61 | |
| Dipping Vat (Cattle) | 64.33 | |
| Dipping Vat (Swine) | 110.28 | |
| Painting Hog Barn | 59.27 | |
| Doors—Judging Pavilion | 23.80 | |
| Moving and Setting Scales | 48.50 | |
| Silo—Beef Feeding Plant | 684.80 | |
| Adapting seed house for Herdsman.... | 500.00 | |
| Repairs to Herdsman's House | 195.95 | |
| Cotton and Hay Shed | 280.30—\$ | 7,415.58 |
| Botany and Bacteriology Division— | | |
| Botanical Publications | 45.55 | |
| Glassware and Lab'y Supplies | 392.98 | |
| Collecting Materials | 390.21 | |
| Repairs and Replacements | 100.00 | |
| Eight Microscopes | 399.98 | |
| Thirty Stools | 60.00 | |
| Morphology Equipment | 100.00 | |
| Apparatus | 72.88—\$ | 1,561.60 |

Dairy Division—

| | | | |
|--|----|----------|----------|
| Wages—Creamery Foreman | \$ | 900.00 | |
| Wages—Dairy Herdsman | | 566.64 | |
| Dairy Herd Labor for Teaching | | 494.82 | |
| Feed for Dairy Herd for Teaching | | 492.14 | |
| Freight and Express | | 59.11 | |
| Glassware and Chemicals | | 479.08 | |
| Operating and Upkeep Expenses | | 141.30 | |
| Repairs to Fences | | 196.77 | |
| Repairs to Refrigerating Plant | | 169.37 | |
| Expenses to Judging Contest | | 36.26 | |
| Livestock Exhibit State Fair | | 299.60 | |
| Cow Manger in W. Wing Hog Barn | | 251.39 | |
| Service Hire from Calf Barn | | 37.38 | |
| Water Troughs in Bull Pens | | 75.00 | |
| Concrete Platforms | | 20.00 | |
| Ice Box—Creamery | | 40.00 | |
| Test Cow Stables | | 754.33 | |
| Small Laboratory Equipment | | 92.71 | |
| Creamery Equipment for Teaching | | 107.34 | |
| Feed Truck | | 46.41 | |
| Barn Equipment | | 41.35 | |
| Grading and Planting Shrubs | | 48.55—\$ | 5,349.55 |

Entomology and Zoology Division—

| | | | |
|-----------------------------------|----|----------|--------|
| Class and Lab'y Materials | \$ | 142.75 | |
| Labor | | 23.60 | |
| Repairs to Instruments | | 41.26 | |
| Spray and Dusting Machinery | | 130.24 | |
| Microscopes for Lab'y | | 147.07 | |
| Stools for Laboratory | | 50.00—\$ | 534.92 |

Geology and Mineralogy Division—

| | | | |
|---------------------------------------|----|-----------|--------|
| Laboratory Supplies and Repairs | \$ | 54.40 | |
| Labor | | 28.45 | |
| Maps and Folios | | 25.00 | |
| Lantern Slides | | 23.35 | |
| Ceramics Testing Furnace | | 100.00—\$ | 231.20 |

Horticultural Division—

| | | | |
|--------------------------------------|----|----------|----------|
| Part Salary Greenhouse Foreman | \$ | 660.00 | |
| Part Salary Hort. Foreman | | 600.00 | |
| Labor | | 899.12 | |
| Fertilizers | | 149.66 | |
| Seed, Plants, etc. | | 199.95 | |
| Greenhouse Supplies and Repairs..... | | 101.63 | |
| Coal for Greenhouse | | 99.79 | |
| Spray Apparatus and Materials..... | | 99.75 | |
| Feed for two mules | | 249.75 | |
| Tools for Class use | | 99.62—\$ | 3,159.22 |

Office and Unclassified Division—

| | | | |
|---------------------------------------|----|----------|----------|
| Janitors and Janitor Supplies | \$ | 1,247.44 | |
| Gasoline | | 200.49 | |
| Attendance on Conventions | | 59.30 | |
| Stationery and Postage for Dept. | | 496.15 | |
| Upkeep of Building | | 163.27 | |
| Window Shades for Building | | 73.30 | |
| Two Telephones | | 39.72—\$ | 2,279.67 |

Veterinary Science Division—

| | | | |
|------------------------------------|----|----------|--------|
| Janitor and Extra Labor | \$ | 500.00 | |
| Coal | | 49.90 | |
| Veterinary Journals | | 4.00 | |
| Repairs to Fences and Stalls | | 74.09 | |
| Laboratory Supplies | | 98.10—\$ | 726.09 |

Salaries—

| | | | |
|--|----|--------------|-----------|
| Salaries—Professors and Assistants ... | \$ | 33,962.22—\$ | 33,962.22 |
|--|----|--------------|-----------|

| | | | |
|-------------------------------|--|----|-----------|
| Department Expenditures | | \$ | 57,810.58 |
|-------------------------------|--|----|-----------|

CHEMICAL DEPARTMENT**Chemistry Division—**

| | | | |
|------------------------------------|----|-----------|----------|
| Chemical Apparatus | \$ | 400.00 | |
| Chemicals and Supplies | | 597.50 | |
| Gasoline | | 300.00 | |
| Books, Journals and Bindings | | 189.85 | |
| Repairs to Apparatus | | 79.93 | |
| Incidentals | | 149.94 | |
| Janitor and Office Helper | | 660.00 | |
| Repairs to Plumbing | | 65.94 | |
| Chemical Apparatus | | 599.73—\$ | 3,042.89 |

Salaries—

| | | | |
|---------------------------------|----|-------------|----------|
| Professors and Assistants | \$ | 8,999.98—\$ | 8,999.98 |
|---------------------------------|----|-------------|----------|

| | | | |
|-------------------------------|--|----|-----------|
| Department Expenditures | | \$ | 12,042.87 |
|-------------------------------|--|----|-----------|

MILITARY DEPARTMENT**Office and Unclassified Division—**

| | | | |
|---------------------------------------|----|----------|----------|
| Postage, Stationery, etc | \$ | 485.26 | |
| Military Supplies | | 56.80 | |
| Upkeep of Band | | 98.45 | |
| Officer's Sabres | | 159.00 | |
| Cadet Officer's Insignia | | 325.00 | |
| New Band Instruments | | 125.02 | |
| Rebuilding Target Range | | 125.02 | |
| Office Equipment | | 55.02 | |
| Drill Sabres for Cadet Officers | | 35.00 | |
| Typewriter for Office | | 74.00—\$ | 1,513.55 |

Salaries—

| | | | | |
|---|----|----------|-----|----------|
| Salaries—Commandant and Assistants..... | \$ | 5,066.65 | —\$ | 5,066.65 |
|---|----|----------|-----|----------|

| | | | | |
|-------------------------------|--|--|----|----------|
| Department Expenditures | | | \$ | 6,580.20 |
|-------------------------------|--|--|----|----------|

ENGINEERING DEPARTMENT**Expenditures****Civil Engineering Division—**

| | | Divisional | Departmental |
|--|----|------------|--------------|
| Class Materials | \$ | 86.34 | |
| Repairs and Replacements | | 92.52 | |
| Equipment for Testing Laboratory | | 3,453.98 | |
| One Transit | | 365.87 | |
| One Level | | 133.59 | |
| Class Room Seats | | 49.02 | \$ 4,181.32 |

Drawing Division—

| | | | |
|--|----|--------|-----------|
| Materials, Ink, Paper, etc. | \$ | 29.31 | |
| Repairs and Renewal of apparatus | | 70.49 | |
| Expenses of Architects' Contest | | 25.94 | |
| Subscriptions to Magazines | | 59.50 | |
| Student Help in Blue Printing | | 22.90 | |
| Desks and Lockers | | 200.00 | |
| Plaster Cases | | 25.00 | |
| Reference Books | | 49.60 | \$ 482.74 |

Electrical Engineering Division—

| | | | |
|---|----|--------|-----------|
| Laboratory Supplies | \$ | 108.94 | |
| Repairs and Renewals | | 104.98 | |
| Class and Lab'y notes for Students..... | | 29.96 | |
| Student Assistance | | 175.20 | |
| Reference Books, etc. | | 39.95 | |
| Switch Board Wiring and Charges..... | | 144.68 | |
| Special G-6 Motor | | 25.00 | |
| Oscillograph Outfit | | 172.00 | \$ 800.71 |

Forge and Foundry Division—

| | | | |
|-------------------------------------|----|----------|-------------|
| Labor for Forge and Foundry | \$ | 1,380.00 | |
| Repairs and Replacements | | 75.00 | |
| Forge Shop Supplies | | 300.00 | |
| Coal for Forge Shop | | 374.51 | |
| Foundry Supplies | | 49.97 | |
| Pig Iron and Brass for Foundry..... | | 150.00 | |
| Moulding Sand | | 57.00 | |
| Coke for Foundry | | 65.00 | |
| Six New Forges | | 187.39 | |
| Ventilating Fan and Motor | | 101.84 | \$ 2,740.71 |

Machine Shop Division—

| | | | |
|---------------------------------------|----|--------|-------------|
| Labor, Machinist | \$ | 750.00 | |
| Repairs and Replacements | | 188.37 | |
| Shop Materials | | 299.98 | |
| Grinding Attachment | | 43.57 | |
| Side Milling Cutting Attachment | | 69.97 | |
| Magnetic Chuck | | 110.00 | \$ 1,461.89 |

Mechanical Engineering Division—

| | | | |
|--------------------------------|----|--------|-----------|
| Laboratory Supplies | \$ | 134.62 | |
| Repairs and Replacements | | 34.10 | |
| Transfer of Equipment | | 498.99 | |
| Viscosimeter | | 109.97 | |
| Tachometer | | 65.00 | \$ 842.68 |

Office and Unclassified Division—

| | | | |
|---|----|--------|-------------|
| Labor—Janitor | \$ | 600.00 | |
| Office and Janitor Supplies | | 209.59 | |
| Upkeep of Building | | 39.77 | |
| Attendance on Conventions | | 62.59 | |
| Incidentals | | .72 | |
| Extra Class Room Seats | | 225.00 | |
| Equipment of New Room for Designing | | 60.00 | \$ 1,197.67 |

Wood Shop Division—

| | | | |
|--|----|--------|-------------|
| Labor—Machinist | \$ | 397.15 | |
| Supplies as Lumber, etc. | | 473.28 | |
| Repairs and Replacements | | 325.93 | |
| Removal of Equipment to New Shop | | 249.68 | |
| Eight Special Lathes | | 216.47 | \$ 1,662.51 |

Salaries—

| | | |
|--|-------------|--------------|
| Salaries—Professors and Assistants | \$34,166.66 | \$ 34,166.66 |
|--|-------------|--------------|

| | |
|-------------------------------|-------------|
| Department Expenditures | \$47,536.89 |
|-------------------------------|-------------|

TEXTILE DEPARTMENT**Carding and Spinning Division—**

| | | | |
|-------------------------------|----|--------|-----------|
| Cotton for Class Use | \$ | 165.00 | |
| Repairs and Supplies | | 179.66 | |
| Materials for Class Use | | 94.65 | |
| Yard Numbering Machine | | 50.00 | \$ 489.31 |

Dyeing Division—

| | | | |
|-------------------------------------|----|--------|-----------|
| Chemicals and Dye Stuffs | \$ | 173.55 | |
| Glassware and Lab'y Materials | | 192.42 | |
| Mics. Small Lab'y Apparatus | \$ | 191.68 | |
| Installation of Apparatus | | 25.72 | \$ 583.37 |

Office and Unclassified Division—

| | | | |
|----------------------------|----|----------|--|
| Janitor and Engineer | \$ | 1,128.60 | |
| Gasoline | | 75.52 | |

| | | |
|---|-----------------|---------------------|
| Stationery, Postage, etc. | 52.39 | |
| Student Labor | 79.90 | |
| Mill Boy Helper | 298.30 | |
| Textile Periodicals | 13.05 | |
| Freight on Donated Machinery | 98.66 | |
| Belting, Pulleys, etc. | 49.80 | |
| Additional class Room Chairs | 23.50 | |
| Additional Class Room Seats | 121.54—\$ | 1,941.26 |
| Weaving Division— | | |
| Warp and Filling Yarn | \$ 561.01 | |
| Loom Supplies and Repairs | 158.01 | |
| Knitting Yarn and Samples for Analysis..... | 23.52 | |
| Drawing Frame | 239.00—\$ | 981.54 |
| Salaries— | | |
| Salaries—Professors and Assistants | \$ 10,300.00—\$ | 10,300.00 |
| Department Expenditures | | \$ 14,295.48 |

PUBLIC UTILITIES DEPARTMENT

| | | |
|---|-----------|----------|
| Campus Division— | | |
| Part Salary Campus Foreman | \$ 660.00 | |
| Labor for Campus | 1,518.97 | |
| Fertilizers | 249.38 | |
| Seed, Plants and Trees | 190.65 | |
| Feed and Upkeep—4 mules..... | 468.13 | |
| Tools, Machinery and Repairs | 146.78 | |
| Auto Signs and Markers | 48.92 | |
| Storm Water Drainage | 1,000.00 | |
| Coping for Road..... | 512.28 | |
| Development for Expt. Sta. Road | 291.01 | |
| Trees, Plants, etc. | 149.69 | |
| Development—New Laundry | 249.80 | |
| Development—New Area Barracks No. 1..... | 73.75 | |
| Mowing Machine | 75.00 | |
| Trash Boxes | 100.00 | |
| East Stone Entrance | 500.00 | |
| Development at Broad Casting Station | 199.62—\$ | 6,433.98 |
| Construction and Repair Division— | | |
| Office Supplies | \$ 46.99 | |
| Repairs and Renewals | 21.65 | |
| Tools and Implements | 24.90 | |
| Gasoline and Tires for Truck | 93.01 | |
| Stack for Lumber | 294.59 | |
| Repairs to Public Buildings | 4,202.57 | |
| Misc. Unforeseen Reprs. to Public Bldgs. | 1,543.31 | |
| Repairs to Residences | 4,166.04 | |

| | | |
|---|----------|-----------|
| Misc. Unforeseen Reprs. to Residences | 713.50 | |
| Ceiling Class Room—Rosenkrans | 126.67 | |
| Ceiling Class Room—Aull | 90.91 | |
| Making two Floors—Museum | 839.86 | |
| Heat, Light and Water for above | 190.00 | |
| Paint outside Basket Ball Bldg. | 104.00 | |
| Connice roof N. End Basket Ball Bldgs. ... | 36.62 | |
| Ladies Dressing Room—Basket Ball Bldgs. | 32.25 | |
| Stoves for Heating Basket Ball Bldg. | 39.20 | |
| Completion 2nd. story wood shop | 345.87 | |
| Toilet Ladies Recp. Room Basket Ball Bldg. | 145.59 | |
| Partitioning up Mech-Lab'y | 908.22 | |
| Completing Blue Print Room | 90.00 | |
| Wire Guards—Basement Barracks No. I..... | 189.68 | |
| Closing Windows D. Room to Wash Room | 139.35 | |
| New Doors for Armory | 38.88 | |
| Chipped Glass for Windows | 164.73 | |
| Enlarging toilet, etc., Cadet Hospital..... | 183.54 | |
| Close in Rear Porch—Cadet Hospital..... | 65.29 | |
| Toilet and Bath—Hotel | 207.02 | |
| Completion of P. O. Equipment | 327.66 | |
| Partitioning off Class Rooms | 229.36 | |
| Supply Room—Textile Dept. | 131.78 | |
| Close up Stairway—Textile Dept. | 9.60 | |
| Radiators in Cafe—Y. M. C. A. | 49.33 | |
| Two Windows—Crandall | 29.92 | |
| Double door—Hunter | 23.33 | |
| Extend D. Room and Kitchen—Front Porch | | |
| —Mitchell | 581.50 | |
| Enlarge toilet—Pickett | 19.28 | |
| Plaster Kitchen—Conradi | 47.59 | |
| Lavatory—Winters | 14.20 | |
| Salary—Supt. Hewer | 1,800.00 | |
| New Laundry Bldg. | 9.10 | |
| Radio House | 1,055.65 | |
| Sanitary Closets—Campus | 306.71 | |
| Toilet and D. Rooms for Barracks Help..... | 667.33 | |
| Memorial Tablet—W. S. M. | 50.00 | |
| Memorial Tablet—McHugh | 25.00 | |
| Screening low class Room windows | 535.95 | |
| Approved Well Fixtures | 500.00 | |
| Extension N. Wing Barracks No. 1..... | 3,518.46 | |
| Pay for Timms on sick leave | 41.40—\$ | 25,017.39 |

Farm Division—

| | | | |
|--------------------------|-----------|--------|--------|
| Ditching on Bottom | \$ | 400.00 | |
| Repairs to Barn | 195.05—\$ | | 595.05 |

Heat, Light and Water Division—

| | | |
|--|---------------------|--|
| Labor—Engineers, Fireman, etc. | \$ 6,870.75 | |
| Supplies | 1,899.25 | |
| Coal | 13,896.98 | |
| Repairs | 272.94 | |
| Water leakage detector | 74.97 | |
| Equipment for Wood Shop Toilet..... | 59.99 | |
| Power Station Equipment | 20,425.44 | |
| Repairs to Coal Chute | 572.18 | |
| Chloremeter for Filtration Plant | 499.86—\$ 44,572.36 | |

Roads and Hauling Division—

| | | |
|---|----------------------|--|
| Labor, truck drivers, etc. | \$ 2,042.34 | |
| Hire of teams from Farm | 203.34 | |
| Gasoline, oil, tires repairs, etc. | 1,299.61 | |
| Additional road Machinery | 500.00 | |
| Salary, Supt. | 1,500.00—\$ 5,545.29 | |

Telephone System—

| | | |
|-----------------------------------|------------------|--|
| Upkeep of System | \$ 150.06 | |
| Labor, Operator and Repairs | 691.04—\$ 841.10 | |

Night Watchman—

| | | |
|---|--------------------|--|
| Salary Watchman and Special Police..... | \$ 800.00 | |
| Watchman, Supplies | 28.51 | |
| Salary, Campus—Marshall | 786.14—\$ 1,614.65 | |

| | |
|-------------------------------|--------------|
| Department Expenditures | \$ 84,619.83 |
|-------------------------------|--------------|

MISCELLANEOUS DEPARTMENT**Library Division—**

| | | |
|------------------------------------|----------------------|--|
| Magazines | \$ 282.50 | |
| Binding | 400.00 | |
| Supplies | 35.28 | |
| Membership dues to Societies | 15.00 | |
| Books | 1,000.65 | |
| Book Stocks | 120.00 | |
| Filing Cabinets | | |
| Flag Case | 39.25 | |
| Salaries—Librarian and Asst. | 2,490.00—\$ 4,382.68 | |

Miscellaneous Items Division—

| | | |
|---|-----------|--|
| Salary Stenographer (Keith)..... | \$ 385.33 | |
| Exp. of Trustees and Board of Visitors..... | 1,116.78 | |
| Insurance | 5,335.51 | |
| Contingent and Incidentals Exp. | 3,000.00 | |
| Ministers | 2,190.70 | |
| Y. M. C. A. Secty. | 500.00 | |
| College Catalogue | 765.00 | |
| Annual reports (reprints, etc.) | 82.90 | |

| | |
|--|---------------------|
| Commencement Expenses | 290.84 |
| Trustees Medals | 29.25 |
| Chapel Lecture | 65.00 |
| Membership to Nat. Association | 96.00 |
| Examination Booklets | 300.22 |
| Pension of J. B. Stephens | 300.00 |
| Scavenger Service | 480.00 |
| State Fair Exhibit | 499.21 |
| Travel and entertainments, Leg. Com. etc. | 397.65 |
| Summer School | 500.00 |
| One tenth principal of Loan | 11,284.21 |
| Int. on \$112,842.11 at 6 percent | 6,770.52 |
| Ford Runabout | 495.00 |
| Radio Recieving set | 246.52 |
| Salary Magistrate | 100.00 |
| Boys Club Work Scholarship | 600.00—\$ 35,830.64 |

President's Office—

| | |
|--|------------------------|
| Students Cards, forms, etc. | \$ 715.98 |
| Stamps, Stationery and Supplies | 951.59 |
| Traveling Expenses | 678.09 |
| Janitor, Janitor Supplies | 600.00 |
| Salaries, President—Registrar, Dir. of Student Affairs, Stenographer, etc. | 15,960.08—\$ 18,905.74 |

Treasurer's Office—

| | |
|--|--------------------|
| Students cards, forms, etc. | \$ 600.00 |
| Record Books, Stationery, postage etc..... | 775.00 |
| Emergency Asst. | 720.00 |
| Premiums on bonds | 112.50 |
| Salaries—Treas. and Bookkeepers | 4,930.00 |
| Audit of Book and accounts (Season) | 585.14—\$ 7,722.64 |

Department Expenditures **\$ 66,841.70**

SUMMARY OF COLLEGE FUND

| Public State Work: | | Appropriation | Expenditures | |
|-------------------------------------|------------------------------|---------------|--------------|--------------|
| A | Scholarships & Advertis's | 20,000.00 | 13,889.79 | |
| B | Fertilizer Insp. & Anal..... | 33,750.00 | 27,085.62 | |
| | | <hr/> | <hr/> | <hr/> |
| | | \$53,750.00 | \$40,975.41 | \$12,774.59 |
| College Work: | | | | |
| A | Academic Department | 37,563.00 | 34,175.85 | 3,387.15 |
| B | Agricultural Department ... | 64,069.44 | 57,810.58 | 6,258.86 |
| C | Chemical Department | 12,075.00 | 12,042.87 | 32.13 |
| D | Military Department | 8,055.00 | 6,580.20 | 1,474.80 |
| E | Engineering Department ... | 50,647.00 | 47,536.89 | 3,110.11 |
| F | Textile Department | 14,369.00 | 14,295.48 | 73.52 |
| G | Public Utilities Department | 108,819.59 | 84,619.82 | 24,199.77 |
| H | Miscellaneous Department | 68,947.74 | 66,841.70 | 2,106.04 |
| | | \$418,295.77 | \$364,878.80 | \$53,416.97 |
| Balance June 30, 1923 | | <hr/> | 148,911.33 | <hr/> |
| Unapportioned Funds Included in | | | | |
| Total Cash Receipts | | 95,494.36 | | 95,494.36 |
| | | <hr/> | <hr/> | <hr/> |
| | | \$513,790.13 | \$513,790.13 | \$148,911.33 |

REPORT ON OTHER FUNDS

Cadet Fund—

The Cadet Fund which is carried on the books as an independent account. The funds, in this connection, to be accounted for, amount to \$249,706.35, of which \$237,310.61 was expended during the year, leaving a balance of \$12,395.74, as of date June 30, 1923.

Cadet Deposits—

A private banking business is operated by the Treasurer for convenience of the students. Individual ledger accounts are kept with the cadets for their deposits and a controlling account is carried on the general ledger, covering all transactions of this nature. I have audited these accounts for the year ended June 30, 1923 and present the following statement, to wit:

Cadet Banking Accounts

| | |
|------------------------------------|-----------|
| Total Deposits | 80,682.50 |
| Less: Overdraft July 1, 1922 | 73.22 |
| | <hr/> |
| | 80,609.28 |
| Deduct: Checks paid | 77,967.41 |
| | <hr/> |
| Balance June 30, 1923 | 2,641.87 |

The balance of \$2,641.87 has been verified with the individual accounts of depositors.

Revolving Account—

The Re-investment, or Revolving Account represents various activities, not directly connected with the college work.

CADET FUND

Receipts—

| | | |
|------------------------------------|---------------|---------------------|
| Balance on hand July 1, 1922 | \$ 13,454.01 | |
| Activity Fees | 11,448.92 | |
| Breakage | 3,521.45 | |
| Diplomas | 475.05 | |
| Room, Heat, Light, Water | 15,140.95 | |
| Hospital | 11,665.77 | |
| Incidentals | 7,903.37 | |
| Laundry | 12,715.81 | |
| Subsistence | 143,708.82 | |
| Uniforms | 29,672.20 | \$236,252.34 |
| | | <hr/> |
| | | \$249,706.35 |
| | | <hr/> |

Expenditures—

Expenditures from balance on hand July 1st., 1922—

| | | |
|------------------------------------|-------------|-------------|
| Labor—Carpentering, etc. | \$ 2,896.79 | |
| Freight and Express | 7.54 | |
| Telegraph and Telephone | 30 | |
| Repairs | 61.13 | |
| Gasoline | 3.06 | |
| Clothing and Dry Goods | 173.57 | |
| Supplies | 260.02 | |
| Feed and Veterinary Supplies | 75.00 | |
| Materials, etc. | 1,511.91 | |
| Equipment | 2,118.65 | \$ 7,107.97 |

Activity Fees—

| | | |
|--|-----------------|--|
| Salaries—Coach and Asst. | 2,608.29 | |
| Labor | 302.64 | |
| Officials and Umpires | 20.00 | |
| Guarantees and Exps. visiting Teams..... | 1,651.28 | |
| Travel—Clemson Teams..... | 2,244.93 | |
| Rain Insurance | 40.32 | |
| Supplies | 1,660.49 | |
| Bleachers, Benches and Fencing..... | 200.56 | |
| Student Membership—Y. M. C. A. | 400.00 | |
| Student Publications, Posters, etc. | 311.50 | |
| Freight and Express | 13.71 | |
| Telegraph, Telephone and Postage..... | 45.54 | |
| Hospital, Medical and Dental Fees..... | \$ 117.13 | |

| | | |
|---|----------|--------------|
| Assoc. Dues and Exps. of Delegates..... | 41.24 | |
| Lyceum Entertainments | 150.00 | |
| Refunds to Students | 109.65 | |
| Transfer to Ath. Assoc. to reduce O. D..... | 1,531.64 | \$ 11,448.92 |

Breakage—

| | | |
|-----------------------------|-------------|-------------|
| Labor—Carpentering | \$ 1,146.64 | |
| Freight and Express | 92.12 | |
| Printing, etc. | 91.06 | |
| Misc. Supplies | 746.79 | |
| Refunds to Students | 75.00 | |
| Materials | 358.99 | |
| Household Equipment | 969.16 | |
| Educational Equipment | 41.75 | \$ 3,521.45 |

Diplomas—

| | | |
|----------------|-----------|-----------|
| Diplomas | \$ 407.97 | |
| Ribbons | 8.00 | |
| Seals | 2.06 | \$ 418.03 |

Room, Heat, Light and Water—

| | | |
|----------------------------|-------------|--------------|
| Labor—Engineers, etc. | \$ 3,095.63 | |
| Freight and Express | 9.95 | |
| Telegrams | .40 | |
| Repairs | 206.56 | |
| Coal | 9,795.68 | |
| Educational Supplies | 2.33 | |
| Misc. Supplies | 1,697.94 | |
| Refunds to Students | 274.18 | |
| Materials | 93.53 | \$ 15,176.20 |

Hospital Division—

| | | |
|--------------------------------------|----------|--------------|
| Salaries | 5,100.00 | |
| Labor | 1,139.55 | |
| Consultations, etc. | 30.00 | |
| Freight and Express | 63.41 | |
| Traveling Expenses | 23.92 | |
| Publications, etc. | 60.35 | |
| Laundry, etc. | 239.60 | |
| Coal, etc. | 258.28 | |
| Food Supplies | 1,161.71 | |
| Office Supplies | 52.36 | |
| Medical and Surgical Supplies | 1,245.22 | |
| Refrigerating Supplies | 90.00 | |
| Misc. Supplies | 229.67 | |
| Refunds to Students | 114.13 | |
| Medical and Surgical Equipment | 151.62 | |
| Household Equipment | 298.08 | |
| Misc. Equipment | 9.90 | \$ 10,267.80 |

SUPPLEMENTARY REPORTS

Incidentals—

| | | | |
|--|-----------|----------|--|
| Salary—Q. Master | \$ | 750.00 | |
| Labor—Care of Barracks | | 2,864.40 | |
| Freight and Express | | 298.50 | |
| Repairs | | 54.65 | |
| Office Supplies | | 43.00 | |
| Cleaning and Disinfecting Supplies | | 437.56 | |
| Misc. Supplies | | 1,834.73 | |
| Refunds to Students | | 88.93 | |
| Household Equip. Chairs, etc., for Rooms | 445.89—\$ | 6,817.66 | |

Laundry—

| | | | |
|------------------------------------|-----------|-----------|--|
| Labor | \$ | 7,939.01 | |
| Freight and Express | | 36.62 | |
| Repairs | | 7.58 | |
| Misc. Printed Forms | | 175.75 | |
| Coal | | 498.95 | |
| Feed and Veterinary Supplies | | 218.35 | |
| Office Supplies | | 47.75 | |
| Laundry Supplies | | 2,648.69 | |
| Gasoline and Oil | | 22.50 | |
| Clothing and Dry Goods | | 98.25 | |
| Misc. Supplies | | 12.31 | |
| Equipment | | 351.62 | |
| Refund to Students | 171.74—\$ | 12,229.12 | |

Subsistence—

| | | |
|---------------------------|------------|------------|
| Salaries | 5,000.00 | |
| Labor | 18,900.80 | |
| Groceries | 109,796.29 | |
| Coal | 638.12 | |
| Misc. Supplies | 3,855.41 | |
| Refunds to Students | 2,165.44 | |
| Equipment | 295.20—\$ | 140,651.26 |

Uniforms—

| | | |
|----------------------------|-------------|-----------|
| Uniforms garments .. | 24,454.75 | |
| Refunuds to Students | 5,217.45—\$ | 29,672.20 |

Balance on hand June 30, 1923

\$237,310.61

12,395.74

\$249,706.35

GENERAL STATEMENT OF CADET DEPOSITS.**(Fiscal Year Ended June 30, 1923)****Student's Banking Account.****Receipts—**

| | | |
|--|-------|-----------|
| Total amount deposited July 1, 1922 to | | |
| June 30, 1923..... | | 80,682.50 |
| Deduct: Overdraft July 1, 1922 | 73.22 | 73.22 |
| Net Cash to account for | | 80,609.28 |

Disbursements—

| | | |
|--|--|---------------------|
| Total checks paid (as audited) July 1, 1922 to | | |
| June 30, 1923 | | 77,967.41 |
| Cash balance June 30, 1923 | | 2,641.87 |
| | | <u>\$ 80,609.28</u> |

REVOLVING ACCOUNTS**(Fiscal Year Ended June 30, 1923)****Receipts—**

| | |
|---------------------------------------|---------------------|
| Balance on hand July 1st., 1922 | \$ 30,824.94 |
| Receipts for Fiscal Year | 189,177.71 |
| | <u>\$220,002 65</u> |

Expenditures—Veterinary Hospital—

| | |
|---|------------------|
| Wages—Janitoring | \$ 116.92 |
| Freight, Express and Deliveries | 6.33 |
| Feed and Veterinary Supplies | 839.61 |
| Laundry and Disinfecting Supplies | 25.00 |
| Misc. Supplies | 8.47 |
| Equipment | 6.80—\$ 1,003.13 |

Hog Cholera Serum Work—

| | |
|------------------------------------|---------------------|
| Salaries—Clerks | \$ 3,000.00 |
| Telegraph and Telephone | 21.74 |
| Feed and Veterinary Supplies | 24,367.82 |
| Office Supplies | 191.28—\$ 27,580.84 |

Nursery Inspection Tags—

| | |
|---------------------------|----------------------|
| Freight and Express | \$ 19.71 |
| Supplies (Tags) | 1,024.44—\$ 1,044.15 |

Manufacturing States Flags—

| | |
|----------------|----------------|
| Labor | \$ 5.00 |
| Supplies | 38.96—\$ 43.96 |

Summer School—

| | |
|--------------------------------|--------------------|
| Salaries—Instructors | \$ 3,300.00 |
| Labor | 510.03 |
| Food Supplies | 8,487.57 |
| Traveling Expenses | 14.00 |
| Printing and Advertising | 193.00 |
| Office Supplies | 40.50 |
| Other Supplies | 32.70 |
| Educational Equipment | 70.76—\$ 12,648.56 |

Education of Disabled Soldiers—

| | |
|--|-----------------------|
| Salaries—Instructors | \$ 16,375.45 |
| Labor | 683.31 |
| Special Personal Service | 496.71 |
| Freight, Express, etc. | 4.92 |
| Traveling Expenses | 522.16 |
| Telegraph and Telephone | .25 |
| Repairs | 12.50 |
| Office Supplies | 57.18 |
| Educational Supplies | 103.37 |
| Agricultural and Botanical Supplies..... | 19.36 |
| Misc. Supplies | 81.62 |
| Refunds | 7.58 |
| Materials | 115.54 |
| Office Equipment | 61.00 |
| Educational Equipment | 217.44 |
| Buildings | 3,162.53—\$ 21,920.92 |

Athletic Association—

| | |
|--|-----------------------|
| Salaries—Coach and Assts. | \$ 5,649.97 |
| Labor | 552.23 |
| Officials and Umpires | 621.68 |
| Guarantees and Exps. Visiting Teams | 4,459.66 |
| Travel—Clemson Teams | 5,081.96 |
| Rain Insurance | 637.25 |
| Supplies | 4,326.56 |
| Bleachers, Benches and Fencing | 1,848.93 |
| Student Membership—Y. M. C. A. | 1,808.00 |
| Students Publication, Posters, etc. | 1,454.21 |
| Freight and Express | 73.42 |
| Telegraph and Telephone and Postage | 190.23 |
| Hospital, Medical and Dental Fees | 271.00 |
| Assoc. Dues and Expenses of Delegates..... | 141.70 |
| Lyceum Entertainment | 735.00 |
| Contribution Near East Relief Fund | 603.32 |
| Repay Loan—Stadium Fund | 2,428.98—\$ 30,884.10 |

Textile Cotton Sales—

| | |
|-------------------------------|----------------|
| Freight and Express | \$ 199.39 |
| Telegraph and Telephone | 1.32 |
| Educational Supplies | 224.34 |
| Equipment | 8.04—\$ 433.09 |

Commercial Wood Shop—

| | | |
|----------------------------|-----------|--------|
| Labor | \$ 494.80 | |
| Supplies—Lumber, etc. | 153.78—\$ | 648.58 |

Cadet Exchange—

| | | |
|-----------------------------------|--------------|-----------|
| Salaries—Manager and Clerks | 667.35 | |
| Freight and Express | 132.87 | |
| Repairs | 10.50 | |
| Advertising, etc. | 51.00 | |
| Office Supplies | 7.50 | |
| Texts Books, etc | 16,993.70—\$ | 17,862.92 |

Students Loans and Medals—

| | | |
|-------------------------|-----------|--------|
| Loans to Students | \$ 450.00 | |
| Medals (Norris) | 105.61—\$ | 555.61 |

Co-Operative Cotton Testing—

| | | |
|---------------------------------|-------------|----------|
| Labor | \$ 1,718.65 | |
| Freight and Express | 27.25 | |
| Repairs | 132.96 | |
| Other Contractual Service | 87.84 | |
| Office Supplies | 16.70 | |
| Other Supplies | 83.07 | |
| Educational Equipment | 182.73 | |
| Misc. Equipment | 390.16—\$ | 2,639.36 |

Smith—Hughes Work—

| | | |
|---|--------------|-----------|
| Salaries—Supervisors and Teachers | \$ 21,788.03 | |
| Traveling Expenses | 3,241.52 | |
| Bulletins | 200.00 | |
| Office Supplies | 248.01 | |
| Misc. Supplies | 789.98—\$ | 26,267.54 |

Insurance Sinking Funds

| | | |
|--------------------------|-------------|-------|
| Insurance Premiums | \$ 81.25—\$ | 81.25 |
|--------------------------|-------------|-------|

Smith—Lever Interest Fund—

| | | |
|-----------------------------------|-------------|----------|
| Salaries | \$ 75.00 | |
| Labor | 68.08 | |
| Freight and Express | 128.69 | |
| Traveling Expenses | 177.20 | |
| Telegraph and Telephone | 64.18 | |
| Repairs | 3.94 | |
| Subscription to News Papers | 147.00 | |
| Other Contractual Services | 9.48 | |
| Office Supplies | 4.65 | |
| Misc. Supplies | 273.63 | |
| Office Equipment | 389.41 | |
| Radio Outfit, etc. | 3,398.75—\$ | 4,740.01 |

Rents—

| | | |
|-----------------------------------|--------------|-----------|
| Refunds | \$ 42.00 | |
| Materials | 30.00 | |
| Misc. Equipment | 90.00 | |
| Transfer to College Account | 13,121.01—\$ | 13,283.01 |

Miscellaneous—

| | | | |
|-----------------------------------|----|-----------|-------------|
| Freight and Express | \$ | 37.36 | |
| Transfer to College Account | | 1,054.11— | \$ 1,091.47 |

Receiving Account—

| | | | |
|------------------------------------|----|------------|--------------|
| Labor, 1922—1921 labor bills | \$ | 453.92 | |
| Refunds | | 24.39 | |
| Transfer to College Account | | 13,137.08— | \$ 13,615.39 |

New Laundry Building—

| | | | |
|-------------------------------|----|-----------|-------------|
| Labor—Carpenters, etc. | \$ | 1,550.59 | |
| Architects Fee | | 63.23 | |
| Telegrams and Telephone | | 4.03 | |
| Freight and Express | | 31.48 | |
| Gasoline | | 36.77 | |
| Materials | | 1,988.54— | \$ 3,674.64 |

\$180,018.53

Balance on Hand June 30, 1923 39,984.12

\$220,002.65

REPORT ON FUNDS FOR EXPERIMENTAL WORK AND PUBLIC SERVICE

Experiment Station—

The funds available for expenses of the South Carolina Experiment Station include the following accounts, to wit: Adams Fund, and Hatch Fund, appropriated by the Federal Government, and the receipts from the sale of Farm Products. These Funds amount to \$59,171.92.

Smith-Lever Funds—

The Smith-Lever Funds are special appropriations for public service, received partly from the State of South Carolina and partly from the United States Government. The records show that the receipts for the year ending June 30, 1923 were \$266,877.34. The County appropriations amounted to \$99,224.24 and Winthrop College furnished \$7,000.00, as reported; but these funds were not recorded on the Treasurer's books, as they are not handled through this office.

Comptroller General—

Statements submitted in this report, show the expenditures for Agricultural Research and other public work, as reported by the Comptroller General of South Carolina, covering the College fiscal year, ending June 30, 1923. The Treasurer of Clemson College does not handle these funds.

SOUTH CAROLINA EXPERIMENT STATION ACCOUNT

Hatch Fund, Adams Fund and Farm Products

(Fiscal Year Ended June 30, 1923).

| | |
|--|-------------|
| Balance on hand July 1, 1922 (Sales) | \$ 1,417.51 |
|--|-------------|

Receipts—

Receipts from the Treasurer of the U. S.
as per appropriations for fiscal year ended June
30th, 1923.

| | | |
|-----------------------------|--------------|--------------|
| Hatch Fund | \$ 15,000.00 | |
| Adams Fund | 15,000.00 | |
| Sale of Farm Products | 24,754.41 | \$ 54,754.41 |
| | | <hr/> |
| | | \$ 56,171.92 |
| | | <hr/> |

Expenditures—

| | | |
|---|--------------|--------------|
| Salaries | \$ 19,086.54 | |
| Labor | 13,316.04 | |
| Publications | 88.85 | |
| Postage and Stationery | 743.68 | |
| Freight and Express | 1,107.48 | |
| Heat, Light and Water and Power | 1,948.52 | |
| Chemicals and Laboratory Supplies | 385.05 | |
| Seeds, Plants, etc. | 3,584.01 | |
| Fertilizers | 2,497.23 | |
| Feeding Stuffs | 4,337.80 | |
| Library | 827.00 | |
| Tools, Machinery, etc. | 1,788.16 | |
| Furniture and Fixtures | 1,367.42 | |
| Scientific Apparatus, etc. | 627.46 | |
| Live Stock | 1,425.25 | |
| Traveling Expenses | 151.21 | |
| Contingent Expenses | 50.65 | |
| Building and Land | 910.86 | \$ 54,243.21 |
| Balance on hand June 30, 1923 | | 1,928.71 |
| | | <hr/> |
| | | \$ 56,171.92 |
| | | <hr/> |

SMITH-LEVER EXTENSION FUND

(Fiscal Year Ended June 30, 1923).

Receipts—

| | |
|---------------------------------------|-----------------------|
| Federal Appropriation | \$156,014.49 |
| State Appropriation | 110,862.85 |
| *County Appropriations | 99,224.24 |
| *Winthrop College Appropriation | 7,000.00—\$373,101.58 |

* (\$99,224.24 County Funds and \$7,000.00 Winthrop College Funds included in this report, but not paid out by Treasurer of Clemson College.)

Expenditures—

| | |
|--|-----------------------|
| Salaries—Director and Asst. Director | \$ 6,300.00 |
| Salaries—State Supervising Agents | 13,792.34 |
| Salaries—Specialists | 74,969.96 |
| Salaries County Extension Agents | 180,353.18 |
| Salaries—Stenographers and Clerks | 19,159.28 |
| Labor | 1,038.56 |
| Supplies | 4,657.57 |
| Communication Service | 3,061.32 |
| Traveling Expenses | 53,122.72 |
| Freight and Express | 324.84 |
| Publication | 6,377.83 |
| Heat, Light and Water | 601.50 |
| Furniture and Fixtures | 7,662.42 |
| Library | 302.35 |
| Tools, Machinery and Appliances | 144.53 |
| Office rent | 1,233.18—\$373,101.58 |

* Note:—I will be noted that \$99,254.24 of County Funds and \$7,000.00 from Winthrop College are included in this Statement. The Treasurer of Clemson College does not handle these Funds.

L. A. S.

STATEMENT OF FUNDS DISTRIBUTED BY COMPTROLLER GENERAL

(July 1, 1922 to June 30, 1923).

Receipts:—Appropriations:

| | |
|--|-----------------------|
| Agricultural Research | \$ 51,898.45 |
| Co-Operative Boll Weevil Control | 12,950.73 |
| Crop Pests and Diseases | 8,130.95 |
| Live Stock Sanitary Work | 51,285.58 |
| Tick Eradication | 31,029.89 |
| Slaughtering Diseased Live Stock | 2,573.74—\$157,869.34 |

Expenditures—

| | |
|--|-----------------------|
| Salaries—Scientific Staff | \$ 10,963.85 |
| Salary—Asst. to Director | 1,900.02 |
| Salaries—Chemists | 1,800.00 |
| Salaries—Supt.—Farm and Stations | 9,249.98 |
| Salaries—Herdsman—Dairy and A. Hus. | 2,133.33 |
| Salaries—Foremen—Farm and Hort. | 1,164.00 |
| Publications | 209.68 |
| Office Supplies | 309.56 |
| Labor with Experiments | 6,385.72 |
| Labor—Animal Hus. Div. | 1,751.71 |
| Labor—Dairy Div. | 507.00 |
| Silos | 400.00 |
| Labor—Miscellaneous | 269.72 |
| Seed and Fertilizers | 4,569.67 |
| Machinery and Equipment | 2,309.82 |
| Live Stock | 400.00 |
| Feed and Veterinary Supplies | 2,935.48 |
| Motor Vehicle Supplies | 94.88 |
| Miscellaneous Supplies | 109.27 |
| Office Equipment | 101.03 |
| Underdraining and Cleaning | 775.01 |
| Fencing | 435.70 |
| Misc. Small Equipment | 299.78 |
| Traveling Expenses | 2,823.24—\$ 51,898.45 |
| | <hr/> |
| | \$ 51,898.45 |

Boll Weevil Control—

| | |
|-----------------------------------|---------------------|
| Salary—Scientific Staff | \$ 3,016.61 |
| Salary—Stenographer | 85.00 |
| Salary—Temporary Assistants | 1,920.88 |
| Labor for Poisoning | 12.10 |
| Common Labor producing Crop | 172.25 |
| Traveling Expenses | 614.50 |
| Repair parts to Machine | 79.08 |
| Office Supplies | 55.75 |
| Motor Vehicle Supplies | 120.60 |
| Seeds and Fertilizers | 599.56 |
| Poison Supplies | 1,792.24 |
| Office Equipment | 500.00 |
| Motor Vehicles | 1,021.19 |
| Dusting and Spraying Mach'y | 483.93 |
| Live Stock | 360.00 |
| Insect Cages | 395.08 |
| Office Building | 1,185.54 |
| Miscellaneous Expenses | 536.42—\$ 12,950.73 |
| | <hr/> |
| | \$ 12,950.73 |

SUPPLEMENTARY REPORTS

Crop Pest and Diseases—

| | |
|---------------------------------|-------------------|
| Salaries—Scientific Staff | \$ 4,788.86 |
| Clerk and Stenographer | 1,020.00 |
| Labor—Poisoning Work | 165.94 |
| Traveling Expenses | 1,500.85 |
| Telegraph and Telephone | 55.00 |
| Office Supplies | 502.50 |
| Office Equipment | 97.80—\$ 8,130.95 |

Livestock Sanitary Work—

| | |
|--|---------------------|
| Salaries Veterinarians | \$ 24,072.31 |
| Salaries—Assts. to Veterinarians | 14,000.00 |
| Deputy State Veterinarians Fee | 16.88 |
| Traveling Expenses | 9,594.52 |
| Telegraph and Telephone | 212.14 |
| Office Supplies | 278.31 |
| Other Supplies | 1,342.85 |
| Rent | 885.53 |
| Office Equipment | 133.03 |
| Miscellaneous Equipment | 750.01—\$ 51,285.58 |

Tick Eradication—

| | |
|---|---------------------|
| Salaries—Inspectors | \$ 23,552.66 |
| Salary—Clerk | 875.00 |
| Wages | 708.33 |
| Traveling Expenses | 50.00 |
| Laundry and Disinfecting Supplies | 5,497.62 |
| Miscellaneous Supplies | 346.28—\$ 31,029.89 |

| | |
|---|----------|
| Slaughtering diseased livestock—payment to owners of diseased livestock which have been condemned and slaughtered | 2,573.74 |
|---|----------|

| | |
|-------------|--------------|
| Total | \$157,869.34 |
|-------------|--------------|

GENERAL REPORT ON CASH

Combined Statement—

A combined statement, showing all cash received and disbursed from July 1, 1922 to June 30, 1923. This statement includes (as disbursements) funds deposited in banks, and is presented for the purpose of verifying the cash on hand as of date June 30, 1923. Supporting this balance, therefore, I submit a verification of the Treasurer's office cash account from July 1, 1923 to October 3, 1923, (at which time the cash on hand was actually counted.) At the close of business, Wednesday, October 3, 1923, I carefully counted all cash in the office and audited all post office money orders, checks and other items counted as cash, as indicated by the schedule of this report.

General Cash Statements—

In the general cash statement the unexpended balances pertaining to various funds and accounts, under date of June 30, 1923, are reflected. I have accounted for such balances by a careful audit and reconciliation of the bank accounts which are covered by the schedules.

Final Accounting—

The final accounting, (which proves all receipts and disbursements of record, for the fiscal year ended June 30, 1923 and for the fiscal period commencing July 1, 1923 and ending September 30, 1923) shows that the Treasurer has handled all funds passing through his hands, within the period under review, with the utmost care and accuracy.

Auditor's Note—The cash statements showing varying dates are due to certain conditions under which the audit was made. The actual count of cash being made a few days after the bank audit was closed, for convenience only. A second count of cash, under date of November 7, 1923 was necessary in order to prove the balance at the time Mr. Elmore assumed the responsibilities of Acting Treasurer.

L. A. S.

CONSOLIDATED STATEMENT—ALL FUNDS

(Fiscal Year Ended—June 30,—1923)

Debit:

| | |
|---|---------|
| Balance July 1, 1923 (See Audit Report 1921—22) | n o n e |
|---|---------|

Receipts:

| | | |
|--------------------------------------|------------|--------------------|
| Adam Fund | 15,000.00 | |
| Cadet Deposits | 80,682.50 | |
| Cadet Fund | 241,824.77 | |
| Clemson Bequest (Interest) | 3,512.36 | |
| Hatch Fund | 15,000.00 | |
| Landscript (Interest) | 5,754.00 | |
| Miscellaneous College Receipts | 196,175.20 | |
| Miscellaneous Petty Funds | 183,605.28 | |
| Morrill Fund | 25,000.00 | |
| Privilege Fertilizer Tax | 169,717.53 | |
| Re-investment Fund | 24,754.41 | |
| Smith-Lever Fund (State) | 110,862.85 | |
| Smith-Lever Fund (Federal) | 156,014.49 | |
| Tuition | 15,525.97 | |
| Total | | \$1,243,429.26 |

| | |
|--|-------|
| Over-draft last Audit-June 30, 1922 (Cadet Deposits) | 73.22 |
|--|-------|

Disbursements: (Including Deposits in Bank)

| | |
|----------------------|------------|
| Adam Fund | 15,000.00 |
| Cadet Deposits | 77,967.41 |
| Cadet Fund | 241,824.77 |

SUPPLEMENTARY REPORTS

| | | |
|---|--------------|----------------|
| Clemson Bequest | 3,512.36 | |
| Hatch Fund | 15,000.00 | |
| Landscript | 5,754.00 | |
| Miscellaneous College Fund | 196,175.20 | |
| Miscellaneous Petty Fund | 183,605.28 | |
| Morrill Fund | 25,000.00 | |
| Privelege Fertilizer Tax | 169,717.53 | |
| Re-investment Fund | 24,754.41 | |
| Smith-Lever Fund (State) | 110,862.85 | |
| Smith-Lever Fund (Federal) | 156,014.49 | |
| Tuition | 15,525.97 | \$1,240,714.27 |
| <hr/> | | |
| Total (Including unexpended balances) | 1,240,787.49 | |
| (on deposit in Banks—) | | |
| Cash Balance June 30, 1923: (Office Cash) | | |
| Cadet Deposits | | 2,641.87 |
| <hr/> | | |
| Total | | \$1,423,429.36 |

GENERAL CASH STATEMENT—ALL FUNDS

(Fiscal year ended June 30, 1923)

Debit—

| | | |
|--|------------|----------------|
| Balance July 1, 1923: (See Audit Report 1921—22) | | |
| College Fund | 71,502.87 | |
| Cadet Fund | 13,454.01 | |
| Revolving Fund | 30,834.94 | |
| South Carolina Experiment Station | | |
| (Sales Fund) | 1,417.51 | 117,199.33 |
| <hr/> | | |
| Cash Receipts— | | |
| College Account | 442,287.26 | |
| Cadet Fund | 236,252.34 | |
| Revolving Fund | 189,177.71 | |
| Students Banking Acct. (Deposits) | 80,682.50 | |
| South Carolina Expmt. Station | 54,754.41 | \$1,003,154.22 |
| <hr/> | | |

| | | |
|---|------------|----------------|
| State Appropriations (Reported by College) | | |
| (Fiscal Year) | | 157,869.34 |
| Smith-Lever Extension Funds—(Including the following) | | |
| General (Federal & State | | |
| Funds Recd.) | 266,877.34 | |
| Winthrop College Fund (See note *) | 7,000.00 | |
| County Funds (See note *) | 99,224.24 | \$ 373,101.58 |
| <hr/> | | |
| Total | | \$1,651,324.47 |

Credit—**Expenditures— (Vouchers Audited)**

| | | |
|---|--------------|----------------|
| College Account | 364,878.80 | |
| Cadet Fund | 237,310.61 | |
| Students Banking Acct. (Cks. Pd.) | 77,967.41 | |
| Revolving Fund | 180,018.53 | |
| South Carolina Exp. Station | 54,243.21—\$ | 914,418.56 |
| State Appropriation Disbursed by | | |
| Comptroller General of S. C.— | | |
| Agricultural Research | 51,898.45 | |
| Co-operative Boll Weevil Control | 12,950.73 | |
| Crop Pest & Diseases | 8,130.95 | |
| Livestock Sanitary Work | 51,285.58 | |
| Tick Eradication | 31,029.89 | |
| Slaughtering Diseased Livestock | 2,573.74—\$ | 157,869.34 |
| Smith-Lever Extension Work— | | |
| Disbursed by College Treasurer— | | |
| State Account | 110,862.85 | |
| Federal Account | 156,014.49 | 266,877.34 |
| Disbursed by County Officers | 99,224.24 | |
| Disbursed by Winthrop College | 7,000.00—\$ | 373,101.58 |
| | | <hr/> |
| | | 1,445,462.70 |
| Cash Balance June 30, 1923— | | 205,861.77 |
| | | <hr/> |
| | | \$1,651,324.47 |

* Note: These funds not disbursed through this office.

STATEMENT OF CASH ON HAND AND IN BANKS

(Close of Business June 30,—1923)

Distribution of Funds—**Balance June 30, 1923—**

| | |
|--|------------|
| College Reserve Fund | 148,911.33 |
| Cadet Fund | 12,395.74 |
| Cadet Deposits (Banking Account) | 2,641.87 |
| Revolving Fund | 39,984.12 |
| Farm Products Account..... | 1,928.71 |

Total to Account For\$ 205,861.77

Accounted For As Follows—

Cash In Office 2,641.87

Cash In Banks—**Certificates**

| | |
|--|-----------|
| Farmers & Merchants Bk. (And'sn) | 13,387.50 |
| National Bank of Sumter | 39,000.00 |

SUPPLEMENTARY REPORTS

| | | |
|--|----------------|-----------------------|
| Palmetto National Bank (Col'a) | 32,000.00 | |
| Farmers Bank—Abbeville | 12,000.00 | |
| Peoples Savings Bank Abbeville | 11,000.00 | |
| Union Savings Bank Bennettsville | 35,000.00 | |
| Bank of Greenwood | 8,000.00 | |
| The Fort Hill Bank Clemson College | 3,000.00 | |
| Commercial Bank Greenwood | 11,000.00 | |
| Bank of Pendleton | 5,000.00 | |
| National Bank Newberry | 35,000.00 | |
| Total (At 5% interest | 204,387.50 | |
| Check Out | n o n e | —\$ 204,387.50 |

207,029.37

Banking of Pendleton (Checking Account)

| | |
|---|-----------|
| Balance as per Bk. Certif. (GenAc.) | 60,750.85 |
| Less—Checks Out | 26,918.45 |
| Treasurer's Balance | 33,832.40 |
| Overdraft Smith-Lever Acct. | |
| Checks out 6-30, '23 | 8,117.84 |
| Overdrafts | 26,882.16 |
| (Bk. Stmt.) | 35,000.00 |

| | |
|---------------------------|-----------|
| Deduct | 33,832.40 |
| Net Over-draft | 1,167.60 |
| (Bank of Pendleton) | |
| Net overdraft | 1,167.60 |

Net Cash on hand and in banks June 30, 1923—Close \$205,861.77

GENERAL CASH STATEMENT

(Close of Business, September 30, 1923)

| | |
|--|-----------------------|
| Balance July 1, 1923 | 205,861.77 |
| Cash Receipts July 1 to September 30, 1923— | |
| Morrill & Nelson Funds—State | |
| Treasurer Warrant | 25,000.00 |
| Hatch Fund—U. S. Treas. Warrant | 3,750.00 |
| Adams Fund—U.S. Treas. Warrant | 3,750.00 |
| South Carolina Exp. Station | 4,363.05 |
| Clemson Bequest | 1,756.18 |
| Land Script | 2,877.00 |
| Tuition | 4,379.70 |
| Miscellaneous College Receipts | 23,621.35 |
| Smith-Lever State Fund | 110,862.85 |
| Miscellaneous Petty Funds | 35,609.81 |
| Cadet Fund | 66,096.43 |
| Cadet Deposits | 17,064.50 |
| | —\$ 299,130.87 |
| Total to account for | \$ 504,992.64 |

Deduct—**Disbursements—**

| | | |
|---|--------------|---------------|
| Cadet Deposits Acct. Checks Paid | 13,484.49 | |
| Smith-Lever Funds | 45,787.45 | |
| Hatch Fund | 2,591.78 | |
| Adams Fund | 2,188.14 | |
| S. C. Exp. Station (Farm Prod) | 6,066.25 | |
| College Fund | 87,168.94 | |
| Cadet Fund | 60,500.54 | |
| Re-investment Fund (Revolving Act.) | 59,064.88—\$ | 276,852.47 |
| Net Cash to Account For Sept. 30, 1923— | | \$ 228,140.17 |

Accounted for as Follows—

| | | |
|--|------------|--|
| Farmers & Merchants Bank Anderson | 12,048.75 | |
| National Bank of Sumter | 39,000.00 | |
| Farmers Bank Abbeville | 22,000.00 | |
| Peoples Savings Bank Abbeville | 15,000.00 | |
| Union Savings Bank Bennettsville | 35,000.00 | |
| Bank of Greenwood | 15,000.00 | |
| The Fort Hill Bank Clemson College | 3,000.00 | |
| Commercial Bank Greenwood | 15,000.00 | |
| Bank of Pendleton (Int. bearing Act) | 5,000.00 | |
| National Bank of Newberry | 35,000.00 | |
| Pickens Bank (Smith-Lever) | 20,862.85 | |
| | 216,911.60 | |

| | | |
|---------------------------------------|-------------|---------------|
| Checks Out | none—\$ | 216,911.60 |
| Bank of Pendleton (Smith-Lever) | 15,316.37 | |
| Less—Checks outstanding | 6,343.82—\$ | 8,972.55 |
| | | <hr/> |
| | | \$ 225,884.15 |

Bank of Pendleton—

| | | |
|---------------------------------------|--------------|---------------|
| Overdraft as per Bank Statement | 28,710.57 | |
| Add—Cks outstanding (as audited) | 33,112.67 | |
| Treasurer's Record Over-draft | 61,823.24—\$ | 61,823.24 |
| | | <hr/> |
| | | \$ 164,060.91 |
| Cash on Hand | | 64,079.26 |
| | | <hr/> |

Total on hand and in Banks Sept. 30, 1923 Close.....\$ 228,140.17

STATEMENT OF CASH ON HAND

(Analysis of Office Balance October 1 to 3 1923)

| | | |
|--|--------------|-----------|
| Balance as per Treasurer's Statement | 64,079.26 | |
| Cash Received October 1 to October 3, 1923 inclusive— | | |
| Farm Products | 44.87 | |
| Miscellaneous Petty Funds | 5,147.48 | |
| Cadet Fund | 6,959.32 | |
| Cadet Deposits | 1,696.27 | |
| Tuition | 10.00 | |
| Total Cash receipts | 13,857.94—\$ | 13,857.94 |
| Cash to Account For | \$ | 77,937.20 |

Deduct—**Disbursements—**

| | | |
|-------------------------------|-----------|-----------|
| Cadet Banking Account | 726.00—\$ | 726.00 |
| Net Cash to Account For | \$ | 77,211.20 |

Accounted for as Follows—**Cash in Office—**

| | | |
|-----------------------------------|--------------|-----------|
| Actual Cash as counted | 2,463.65 | |
| Post Office Money Orders | 782.92 | |
| Checks for Deposit | 21,584.63 | |
| Other Items Counted as Cash | 18,448.63—\$ | 43,279.52 |

Bank of Pendleton—

| | | |
|------------------------|-----------|-----------|
| Current Balance | 54,322.93 | |
| Less: Checks out | 20,391.25 | 33,931.25 |
| | | 33,931.68 |

| | |
|-----------------------------------|-----------|
| Office Cash October 3, 1923 | 77,211.20 |
|-----------------------------------|-----------|

* **Auditor's Note:**—The account with the Bank of Pendleton is added to the Statement of Office Cash for the reason that the balance, as shown by the Treasurer's Cash Book, includes these funds. This is merely a clearing account for current transactions and is used in the nature of a petty fund to meet such emergencies as are necessarily handled in the discretion of the Treasurer pending their final disposition.

L. A. S.

STATEMENT OF CASH IN OFFICE

(Close of Business, Wednesday October 3, 1923).

| National Currency and Legal Tender: | In Safe | In Till | Total |
|-------------------------------------|------------|----------|------------|
| Twenty dollars bills | 100.00 | | 100.00 |
| Ten dollar bills | 160.00 | 60.00 | 220.00 |
| Five dollars bills | 1,240.00 | 20.00 | 1,260.00 |
| Two dollar bills | | 4.00 | 4.00 |
| One dollar bills | 500.00 | 227.00 | 727.00 |
| | <hr/> | <hr/> | <hr/> |
| | \$2,000.00 | \$311.00 | \$2,311.00 |

Silver and Minor Coin:

| | | | |
|----------------|-------|-------|-------|
| Halves | 40.00 | 4.50 | 44.50 |
| Quarters | 40.00 | 6.50 | 46.50 |
| Nickels | 30.00 | 1.50 | 31.50 |
| Dimes | 20.00 | | 20.00 |
| Coppers | 10.00 | .15 | 10.15 |
| | <hr/> | <hr/> | <hr/> |

| | | | |
|--------------------------------------|------------|---------|------------|
| Total actual cash (as counted) | \$2,140.00 | \$23.65 | \$2,463.65 |
|--------------------------------------|------------|---------|------------|

| | | | |
|---|--|--|--------|
| Post office money orders (as audited) | | | 782.92 |
|---|--|--|--------|

Checks prepared for deposit—

| | | | |
|----------------------------------|-----------|--|--|
| Total in safe (as audited) | 19,346.42 | | |
|----------------------------------|-----------|--|--|

| | | | |
|--|----------|--|-----------|
| Checks in Cash Till (as audited) | 2,237.90 | | 21,584.32 |
|--|----------|--|-----------|

\$24,830.89

Other Items Counted as Cash:

(Covered by vouchers, not entered
on books of accounts, as audited).

Sundry advances on account of salaries

| | | | |
|---|----------|--|--|
| traveling expense and contractual service | 2,028.86 | | |
|---|----------|--|--|

| | | | |
|-----------------------|----------|--|--|
| Labor pay rolls | 7,939.30 | | |
|-----------------------|----------|--|--|

| | | | |
|---------------|--------|--|--|
| Postage | 215.52 | | |
|---------------|--------|--|--|

| | | | |
|--------------------------------|------|--|--|
| Contingent Pay Roll Item | 5.50 | | |
|--------------------------------|------|--|--|

| | | | |
|---------------|--------|--|--|
| Refunds | 513.58 | | |
|---------------|--------|--|--|

| | | | |
|--------------------------------------|----------|--|-------------|
| Freight and express items paid | 7,745.87 | | \$18,448.63 |
|--------------------------------------|----------|--|-------------|

| | | | |
|--|--|--|-----------|
| Total cash and items counted as cash in office | | | 43,279.52 |
|--|--|--|-----------|

| | | | |
|---|--|--|-----------|
| Balance Bank of Pendleton included cash balance | | | 33,831.68 |
|---|--|--|-----------|

| | | | |
|--------------------------------|--|--|-------------|
| Balance as per cash book. | | | \$77,211.20 |
|--------------------------------|--|--|-------------|

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LETTER OF TRANSMITTAL.

To the General Assembly of South Carolina,
Columbia, S. C.

Gentlemen:

I am herewith transmitting to your hands for the General Assembly the report of the Board of Trustees of the Clemson Agricultural College for the year 1923-24. In doing so I wish to state that the college and its affairs are in excellent business condition.

The teaching at the college is up to the high water mark, and I am much gratified to say that as far as it is humanly possible to do so, every department of the college is moving forward in a proper form.

Yours very truly,

ALAN JOHNSTONE,
President Board of Trustees.

Clemson College, S. C.,

December 20, 1924.

REPORT OF THE PRESIDENT OF THE COLLEGE

Covering the Fiscal Year July 1, 1923—June 30, 1924.

Clemson College, S. C.,
December 20, 1924.

From: S. B. Earle,
Acting President of The Clemson Agricultural College.

To: Hon. Alan Johnstone,
President of the Board of Trustees.

Dear Sir:

I have the honor to submit herewith the President's annual report covering the thirty-first session of The Clemson Agricultural College of South Carolina.

The report covers the fiscal year from July 1, 1923 to June 30, 1924, and is intended for your thirty-fifth annual report to the Legislature.

I have arranged the report in seven main divisions as follows—

CHAPTER I.—THE COLLEGE SESSION—1923-24.

1. A General Statement.
2. A Fiscal Statement.
3. The Collegiate Work.
4. The Student Life and Interests.
5. The Public Service.

CHAPTER II. APPROPRIATIONS FOR 1925

1. Appropriations for College Work.
2. Appropriations for Public Service.

CHAPTER I.—THE COLLEGE SESSION 1923-1924

PART I.—GENERAL STATEMENT

An outstanding sorrow and loss to the college was the sudden death of President W. M. Riggs in Washington on January 22, 1924. Looking at his death from our human viewpoint, no more inopportune time could have been thought for the passing of one who gave so unstintingly of his time, his energy, his intellect—in fact of himself—one who had so much to give. He has left an impress on the college which can never be obliterated. Under his wise hand, Clemson has been steered for fourteen years until today she ranks as one of the big A. & M. colleges of the South.

The enrollment during this session was 1,057—greater by 45 than for any previous session. Of this total there were 932 in the regular four-year courses, or 108 more than for the year before. The remainder were in special and short courses. In addition to this number, 591 attended the 1923 Summer School, bringing the actual total for the year to 1,648.

The graduating class numbered 128 men, of which number 45 were in agriculture, the remainder being scattered through the various other courses.

The health of the students was excellent, except for an epidemic of mumps and measles in the spring. The discipline and class work were also good. The college seems to hold the confidence and regard of the people of the state, as was reflected by the action of the legislature on matters in which the college was concerned.

As has been said, the campus of the college is now the state of South Carolina. The Board of Trustees is an able and consecrated body of men. The college has been, is, and I hope will continue to be, an important means in the development of our state in all lines. Our needs are many in order that we may better serve the greater student body, probably after all our highest duty.

Additions and Improvements:

Among the improvements and additions of the year may be mentioned the addition to the chapel, making the

seating capacity 1,850; and in the basement of the college building the building of quarters for the Physics Division, greatly improving our facilities by taking care of this important subject. The removal of the Physics from the first floor of the administration building also made available more space needed for offices.

The toilets in Barracks No. 1 were torn down after having been condemned, and new ones, modernly equipped, have been built. Some work has also been done in improving the toilets in Barracks No. 2. An additional drawing room has been built in the attic of the engineering building.

The fertilizer tax reached a total of \$220,329.60, considerably more than in the previous year. Our budget to the Legislature was predicated on a tax of \$225,000.00, so that not quite enough money was received to carry out the budget completely. The enrollment this year was so large that in order to seat all students in the messhall, two temporary rooms had to be torn out, and there were 20 rooms in barracks with three men to a room, a condition not conducive either to sanitation or to study.

Inventory:

Our inventory as submitted to the Governor gives the following property values as of date June 30, 1924:

| State Classification: | | Estimated Present Values |
|---|----|-----------------------------|
| 1. Office Equipment ----- | \$ | 65,461.83 |
| 2. Household Equipment ----- | | 67,537.48 |
| 3. Educational and Recreational Equip.--- | | 239,939.93 |
| 4. Library Equipment ----- | | 58,932.17 |
| 5. Vehicles - ----- | | 12,765.14 |
| 6. Live Stock ----- | | 45,617.35 |
| 7. Medical and Surgical Equipment----- | | 2,280.18 |
| 8. Military Equipment ----- | | 2,840.75 |
| 9. General Plant ----- | | 138,041.10 |
| 10. Buildings ----- | | 1,371,492.45 |
| 11. Real Estate ----- | | 362,329.00 |
| Equipment Totals----- | | \$2,367,237.38 |
| 12. Supplies ----- | | 79,532.43 |
| Totals ----- | | \$2,446,769.81 |

Inspections and Visitations:

Under the By-laws of the Board of Trustees, there is elected each year a Board of Visitors composed of one prominent citizen from each congressional district. The Board of Visitors for 1924 was made up as follows:

| | |
|---------------------------------|---------------|
| 1st District—Dr. A. R. Johnston | St. George |
| 2nd District—E. A. Brown | Barnwell |
| 3rd District—J. Wade Drake | Anderson |
| 4th District—Gordon Hughes | Union |
| 5th District—R. S. Stewart | Lancaster |
| 6th District—S. S. Tison | Bennettsville |
| 7th District—Dr. T. H. Dreher | St. Matthews |

This Board visited the College on the first Wednesday in May, all members being present except Mr. Brown and Mr. Hughes.

The Committee spent nearly two days in making a comprehensive inspection of the college. Their report is printed in full on pages 90 and 91.

The Report of the Board of Health:

The inspection of the Board of Health was made in November by Dr. A. H. Hayden, Epidemiologist. The conclusions of this officer were very complimentary to the college, although they found a few conditions which they criticized.

Legislative Visitors:

It is the custom of the college to invite in small groups all members of the General Assembly who have not before visited the college in an official capacity. Of the 1924-25 legislature, there were 141 members who had not before visited Clemson either in the capacity of legislators or members of our Boards of Visitors. All this number were invited during the fall of 1924. Because of the distance from Columbia, it is not practical to have the entire legislature visit Clemson in a body, and we would not be able to properly entertain them if they came. On the other hand, their visits here in small groups of ten to fifteen enables us in two days to show them over the college in a satisfactory manner. I am confident that these visita-

tions have had much to do with the better knowledge of the college by the General Assembly. This better knowledge of the college has had its reflection, as it should have, in the legislation affecting the institution.

Legislative Acts and Appropriations:

The college is asking for almost exactly the same amounts as for last year when our total appropriations for Public Service were \$269,862.85 and for the college work, \$91,813.14. The following appropriations were made by the General Assembly for 1924:

| | |
|--------------------------------------|---------------|
| For Extension Service----- | \$ 110,862.85 |
| For tick eradication ----- | 20,000.00 |
| For livestock sanitary work ----- | 50,000.00 |
| For agricultural research ----- | 50,000.00 |
| For crop pest commission ----- | 10,000.00 |
| For slaughter diseased livestock --- | 4,000.00 |
| For boll weevil territory ----- | 25,000.00 |
| | <hr/> |
| | \$269,862.85 |
| For collegiate instruction ----- | 91,813.14 |
| | <hr/> |
| Total Appropriations---- | \$361,675.99 |

The legislature also cancelled two former loans made to the college.

Several bills affecting the college were introduced in the legislature. However, the only one to pass was Mr. Williams' bill stating that materials used in the manufacture and mixing of all fertilizers supplying nitrogen or ammonia shall be divided into two classes, mineral and organic, the percent of nitrogen or ammonia from each of these classes to be guaranteed with certain variable allowances; also that where a contract exists that fertilizers will be made by use of certain definite sources and amount of ammonia and potash, this shall be done without substitution, subject to penalty for violation. A similar law is in existence in North Carolina, and the authorities there claim to have had no trouble so far; agreeing, however, that the source cannot always be determined.

Board of Trustees:

The Board of Trustees held its three regular annual meetings in November, March and July. Messrs. R. H. Timmerman, H. C. Tillman and W. D. Barnett were re-elected by the legislature as State Trustees, their terms to expire in 1928.

**PART 11.—A FISCAL STATEMENT.
1923-1924.****Fertilizer Tax:**

During the fiscal year under consideration the fertilizer tax reached \$220,329.60. This is more than for last year, though less than for many former years.

Loans from the State Treasury:

Under the Borrowing Act of 1921 we obtained from the State Treasury in October of that year \$112,842.11. Under the 1922 Borrowing Act we obtained from the same source in November 1922, \$150,000.00. Under the terms of this Borrowing Act at least one-tenth of the principal with interest must be paid on the anniversaries of the loans. One payment was made on the first loan in the fall of 1922, but the legislature of 1923 relieved the college of making any payment that year, and in 1924 cancelled both loans.

Treasurer's Annual Report:

The Treasurer's annual report, appearing on page 65 of this report, gives full information in regard to the expenditures of **all** funds which pass through the hands of the college treasurer.

The following is a summary of the receipts and expenditures for college purposes only, and those public activities which are required by law to be paid from the fertilizer tax receipts, namely scholarships and the fertilizer inspection and analysis.

Summarized Statement.**Receipts and Expenditures from the Fertilizer Tax and
Other Funds Available for Collegiate Work.****DR. Resources.****Income:**

| | |
|---|---------------------|
| 1. Interest on Clemson Bequest----- | \$ 3,512.36 |
| 2. Interest on Lanscrip ----- | 5,754.00 |
| 3. Morrill & Nelson Funds (U. S.)----- | 25,000.00 |
| 4. Tuition from Students ----- | 16,505.70 |
| 5. Rents on College Houses ----- | 10,700.82 |
| 6. Interest and Miscellaneous Receipts----- | 13,453.24 |
| 7. Matriculation and Laboratory Fees----- | 3,757.65 |
| 8. Privilege Fertilizer Inspection Tax----- | 220,329.60 |
| Total ----- | \$299,013.37 |

From Other Sources.

| | |
|-------------------------------|-------------------------|
| 9. Reserve Fund from 1923-- | \$148,911.33 |
| 10. State Appropriation ----- | 105,703.85*— 254,615.18 |
| Total ----- | \$553,628.55 |

*This item includes \$44,681.46 state appropriation for year 1923, and \$61,022.39 of state appropriation for year 1924.

CR.

| | |
|---|-------------------------|
| Scholarships and advertisements | \$16,661.45 |
| Fertilizer Inspection & Analysis | 29,710.29—\$46,371.74 |
| College Operating Expenses: | |
| Salaries ----- | \$169,009.91 |
| Coal, Laboratory Supplies, etc. | 102,713.83—\$271,723.74 |
| Equipment for teaching ----- | 19,029.81 |
| Permanent Addit'ns & Improv's | 92,423.71— 111,453.52 |
| Total ----- | \$429,549.00 |
| Reserve on hand June 30, 1924, necessary to carry college during season of small fertilizer sales, July 1st to January 1st \$ | 124,079.55* |
| Total ----- | \$553,628.55 |

*Reserve: It will be noted above that the college entered its fiscal year with apparently \$124,079.55 to its credit. However, during the first six months of the year, July 1st to December 31st, the college received no net revenues from the fertilizer tax. The reserve is necessary to carry the college until the fertilizer season begins early in the following calendar year. Approximately \$200,000 is necessary to carry the college during the barren six months period, and the reserve shown above plus receipts from sources other than the fertilizer tax just about make up that necessary amount.

Report of the Auditor:

The audit of the college books and accounts was made by Mr. L. A. Searson for the State Bank Examiner, and appears as a part of this report. (See page 176). The audit shows total receipts from all sources of \$1,694,302.07, and a total disbursement of \$1,525,146.43, with a balance carried forward of \$169,155.14. This balance was distributed as follows—

To the Credit of—

| | |
|-------------------------------|--------------|
| College fund ----- | \$124,079.55 |
| Cadet fund ----- | 18,432.80 |
| Revolving fund ----- | 22,608.35 |
| Farm products account ----- | 2,083.33 |
| Student banking account ----- | 1,951.61 |
| Total ----- | \$169,155.64 |

The auditor's statement does not include moneys paid in by the Treasurer of the United States for tick eradication, live stock sanitary work and the contribution by the U. S. Agricultural Department for extension service over and above that required of the Smith-Lever Act.

A summary of the funds administered for all activities of the college is as follows—

Summary of All Funds Administered.

Fiscal Year 1923-24

Expenditures:

| | |
|--|---------------|
| 1. For college purposes ----- | \$ 429,549.00 |
| 2. For agricultural public service ----- | 610,772.31* |
| 3. For revolving accounts ----- | 167,763.77 |
| 4. Cadet funds (board, uniform, etc.) -- | 257,376.65 |
| 5. Cadet deposits (personal accounts) -- | 59,684.70 |
| 6. Funds not recorded with Treasurer --- | 119,877.61** |

Total ----- \$1,645,024.04

* Including hog cholera serum and nursery tag inspection carried on revolving accounts.

** Paid by Treasurer of the U. S. on vouchers approved by college officers.

PART III.—THE COLLEGIATE WORK

As stated in a previous chapter, the college work is supported chiefly through the balance which remains on the fertilizer tax after the cost of inspection and analysis has been paid. In 1923 for the first time the legislature made a direct appropriation of \$90,856.66 towards the cost of operation. In 1924 the appropriation was \$91,813.14.

For the fiscal year 1923-24 the total expenditure for what might be properly classified as **collegiate work** was as follows—

| | |
|---|---------------------|
| 1. For salaries | \$169,009.91 |
| 2. For labor, insurance, coal, shop and laboratory materials, etc. | 102,713.83 |
| 3. For scholarships | 16,661.45 |
| Total for operation | \$288,385.19 |
| 4. For teaching equipment | \$ 19,029.81 |
| 5. For minor improvements and additions to plant | 92,423.71 |
| Total Collegiate Cost | \$399,838.71 |

This total is very low in operating cost for a technical college representing approximately \$270.00 per student.

Enrollment:

The total enrollment for 1923-24 was 1,648 distributed as follows—

| | |
|---------------------------------------|--------------|
| (a) In regular college courses | 932 |
| (b) In special courses | 125 |
| | 1,057 |
| (c) Summer school students 1923 | 591 |
| Total | 1,648 |

The 1,057 students enrolled in the regular session of the college were distributed as follows—

| | |
|--|-------|
| In agriculture ----- | 430 |
| In engineering ----- | 440 |
| In textile industry ----- | 120 |
| In chemistry and chemistry engineering ----- | 21 |
| In architecture ----- | 31 |
| In pre-medical ----- | 13 |
| In general science ----- | 2 |
| Total ----- | 1,057 |

Graduates:

The number of graduates receiving the B. S. degree in June 1924 was 128, distributed as follows—

Graduates—Class 1924:

| | |
|---------------------------------|-----|
| In agriculture ----- | 45 |
| In mechanical engineering ----- | 13 |
| In electrical engineering ----- | 22 |
| In civil engineering ----- | 20 |
| In textile engineering ----- | 17 |
| In chemical engineering ----- | 2 |
| In chemistry ----- | 1 |
| In architecture ----- | 7 |
| In general science ----- | 1 |
| Total ----- | 128 |

I would direct special attention to the large percentage of agricultural graduates at Clemson as compared with other colleges. The average number of agricultural graduates since the foundation of the college is 42 percent. This year the 45 men graduating in that course represented practically the above average. Although we suffered a slight decrease during the past session in the number of students taking the agricultural courses, we suffered less proportionately than other southern colleges.

Only in Mississippi, I believe, a state which has practically no industry but agriculture, is the percentage of agricultural graduates higher than at Clemson.

The fact that next to Mississippi we have the largest percentage of students in the courses of agriculture than any other southern college should be a matter of gratification in a state so largely given over to agriculture as is South Carolina. While not desiring that our other courses maintained at much expense should be barren of students, or that our country boys should be denied full scope for their talents and ambitions, we should always hope that the relative importance of agriculture as the leading industry in our state will be reflected in the number of our students pursuing agricultural courses.

Short Courses:

Certificates were awarded to 11 men who had satisfactorily completed the two-year course in agriculture. Thirteen completed the two-year textile course.

Certificates of Merit:

Certificates for distinguished agricultural service were awarded to Mr. J. B. Douthit, Jr., of Pendleton, and Mr. J. Wade Drake of Anderson.

Summer School:

The 1923 summer school extended from June 11th, to July 21st. The enrollment reached 591 as compared with 478 in 1922. The enrollment was distributed as follows—

| | |
|---|-----|
| Agricultural teachers ----- | 358 |
| Students for make-up and entrance ----- | 117 |
| Federal Board Students ----- | 47 |
| Scholarship boys' club ----- | 56 |
| Cotton growers ----- | 8 |
| Poultry husbandmen ----- | 5 |
| Total ----- | 591 |

Scholarships:

In spite of the hard times the scholarships offered by the college were only partly taken up. Eighty-two four-year scholarships were vacant and for these scholarships 146 men stood the examinations. Fifty-six passed the ex-

aminations and fifty the fiscal inquiry of the State Board of Public Welfare. Two applicants who were refused scholarships successfully appealed to the State Board of Education.

For the fifty-five two-year agricultural scholarships, sixty-nine men applied as compared with thirty-eight for the session before, and thirty-five passed as compared with twenty-three the preceding year. Of those who passed the examinations, twenty-four appeared on October 1st to claim the scholarships, as compared with fourteen the year before. This is the second year of the change from one-year to the two-year agricultural course and the above figures will indicate the stimulation of interest effected by the change. This course is open only to young men who have reached the age of eighteen years, and have had at least three years of practical farm experience.

Training of Disabled Soldiers:

Under the supervision of Mr. M. L. McHugh, the work with the Federal Board students continued through June 30th. However, when the question of contract for the year 1924-25 was brought up in the spring of 1924, it was decided not to renew the contract. The work was therefore abandoned with the close of this fiscal year. We have as students in the regular courses a few of these disabled soldiers who have reached the stage of collegiate work.

Reserve Officers' Training Corps:

Clemson College has the distinction of having more students in the advanced infantry course of the R. O. T. C. than any other college in the United States. Under the Morrill Act establishing land grant colleges, we have always required the Freshmen and Sophomore classes to take three hours of military instruction. As an adjunct to discipline, we have required the same amount of military instruction during the Junior and Senior years.

However, the students who enter the advanced course at the beginning of the Junior year are required to take five hours per week of military instruction, and in compensation therefor the government pays such students the value of the army ration. During all four years an average allowance of about \$18.00 is paid as commutation on uniforms. Practically all cadets physically fit go into the advanced R. O. T. C. course when they reach the Junior Class, and as a result receive during their last two years in college about \$100.00 per session to help defray their college expenses.

Teaching Work of the College:

A general spirit of harmony and cooperation has been apparent throughout the session covered by this report.

In 1922 we inaugurated for the first time the two term or semester plan, and this plan has worked very successfully. Last year under the new rule of the faculty to send home at the end of the first semester those students who were hopelessly delinquent, we had fewer students to fail than ever before. On Commencement Day, out of a Senior Class of 128, only two failed to get their diplomas. These will receive their diplomas when they have completed the work necessary.

Salary Scale:

The salary scale at Clemson College is on the average about 20 percent below that of similar institutions in the country.

In 1922 the Bureau of Education in Washington published averages for 73 colleges and universities, and their figures, together with the figures at Clemson, are given for purposes of comparison. When houses are furnished rent free the value of this perquisite is added to the cash salary.

| | Pres. | Deans or Director | Profs. | Assoc. Profs. | Asst. Profs. | Instr's |
|--|--------------|----------------------|--------------|------------------|-----------------|--------------|
| Averages of 73 Colleges and Universities | \$8,482 | \$4,250 | \$3,392 | \$2,800 | \$2,300 | \$1,800 |
| Clemson | | | | | | |
| Averages -- | 6,000 | 3,650 | 2,808 | 2,288 | 2,035 | 1,625 |

In every case it will be noted that Clemson is below the average. No houses or other perquisites go along with positions at Clemson.

It is becoming more and more evident that when vacancies occur they cannot be satisfactorily filled at existing salaries. Men who have been at the college for a long time and have their roots deep in its soil are willing to remain at existing salaries rather than change for a considerable increase.

There would be no advantage and no necessity for increasing the salary of some of the men now on our faculty because they are not worth any more than they are receiving. However, as we fill their places with better men, the general salary scale will advance. In fact, it is not likely that we can fill any position on our faculty with men equal to those we now have for anything like the same salary. Either we will have to pay more money or we will have to replace experienced and efficient men with youngsters who cannot give the service which we require and which our students have a right to expect.

Review of Departments:

The unit of organization at Clemson College is the subject-matter division, such as mathematics, architecture, botany, biology, electrical engineering, mechanical engineering, etc. These divisions are grouped appropriately into seven departments as follows—

Academic; Agricultural; Chemistry; Engineering; Military; Textile; and Student Affairs.

Divisions such as the Library, Treasurer's Office, C. & R. Division, etc., are not grouped into departments, but are directly under the President's supervision.

In the following review of departments it is not attempted to give changes in personnel and other details. Only facts of outstanding interest will be mentioned.

The Teaching Work of Departments:

The higher standard for entrance inaugurated the previous session did not in any way hurt our attendance. In

the Freshman Class there were approximately 300 students with 15 high school units. The better preparation of the new students has meant a better grade of collegiate work and will ultimately, we hope, cut down the number of failures in College and increase the number in the graduating classes. Young men from the rural districts not prepared for the Freshman Class were given the opportunity of entering the two-year course in Agriculture.

The Academic Department—(D. W. Daniel, Director):

The Academic Department includes the divisions of English, mathematics, physics, history and economics, and sociology. It is more directly related to the public school system of the state than are the purely technical departments.

For the past few years, the physics division has been greatly hampered in its work by lack of sufficient space. During the present session, the basement under the chapel has been converted into offices, class rooms and laboratory which will be used for the Physics division. This space will be available by September 1st, 1924, and will greatly facilitate the work of the division. The space now occupied by the physics class rooms and laboratory will be utilized for offices, which are also greatly needed.

The Agricultural Department—Resident Teaching— (F. H. H. Calhoun, Director):

It is gratifying to quote from Director Calhoun's report the following paragraph—

"The affairs of the Agricultural Department have gone so smoothly during the past session that the year would have been uneventful had it not been for the death of President W. M. Riggs. Some years stand out because of unusual happenings such as unrest of the student body, faculty discontent—resulting in an undue number of resignations, or an unusual excellence of the student body. Other years are characterized by no such events and they quickly merge into the stream of time and are soon forgotten. Such has been the year 1923-1924."

Of all the departments of instruction I think we can take more credit for the agricultural department than for any other—not because it is better than the others, but because it is so much better than the agricultural departments in other Southern A. & M. colleges. The teaching force of this department is better perhaps than it has ever been.

I have already referred to the gratifying percent of students in the agricultural courses. This number will always fluctuate as in other courses, depending chiefly upon the opportunities ahead of the agricultural graduates. Good salaried positions as county agents, teachers of agriculture in high schools, specialists in extension and teachers and research workers in colleges and government departments, have in recent years stimulated interest in our agricultural courses by giving to the graduates a profitable outlet. If farming were the only outlet for agricultural graduates, we would have a great decline in numbers, because there is yet that irreconcilable conflict between the socialistic view which would have a nation of small farmers, and the business view, so typical of America, that only through large units can brains and energy be properly compensated.

The college cannot control the number of students selecting the various courses nor direct them in their life work upon leaving college, but it can and ought to guarantee the quality of the work done, and it is because of the quality of this work in our agricultural department that we may well be proud.

The agricultural department is still badly handicapped by lack of sufficient class rooms and laboratories, and these must soon be provided either by an addition to the present agricultural hall, or preferably by a new building which will house the extension and horticulture.

The inauguration of work for the master's degree which was begun with last session (1923-24) marks another step forward and will add much to the prestige and usefulness of the institution. This is especially true of certain lines of agricultural study. Some of these lines—for instance horticulture,—is in a measure a local problem, and

for that reason advanced work cannot be pursued to equal advantage in an institution in a different part of the country.

The Engineering Department—(S. B. Earle, Director):

The engineering department has shown the usual efficiency, though handling more men than ever before. The laboratories of the upper classmen have all been improved by the addition of some much needed equipment. The civil engineering testing laboratory has been strengthened. This laboratory is used both in the teaching of students and also in testing the materials that are used in road building. We are now working on a survey of the road materials in our state, as well as carrying on some other experimental work.

The Engineering Experiment Station which has been established in the engineering department, should be able to assist in finding out important facts in connection with road buliding in our state. This project is growing rapidly, and any facts that may be found out experimentally may lead to a great saving in construction and to better roads, when bulit.

Director Earle makes the following comment—

“There has been greater interest in the work of the department than in the past, as evidenced by the ever increasing numbers taking the course, and by the fact that a larger percentage of those entering, eventually complete the course.”

The Military Department—(Major Madison Pearson, Commandant):

The military department has done its work of this session with unusual smoothness. The college again was rated by the War Department as a “Distinguished College.” The military discipline is at the basis of efficient operation of the college, contributing to promptness, regularity and economy in time. The Commandant has had during the session seven commissioned officers and three army sergeants. The entire staff has been engaged in

teaching the military science of the R. O. T. C. courses, and the commissioned officers have all had a part in the administration of discipline.

Only thirty-three cadets in the entire corps were not enlisted in the Reserve Officers Training Corps, and we still maintain the distinction of having more men in the infantry branch of the advanced course than any other college in the nation. Likewise, I doubt if there is another college which has as large a percent of its junior and senior classes voluntarily entering the advanced course. Our enrollment is practically 100 percent every session.

Military discipline enables the work of the college to be carried on in an orderly manner, and is one of the causes of the praise which has been elicited from every inspecting body that has ever been here. While other colleges get on without this discipline, I doubt if the same efficiency is attained as at Clemson. I am confident that one of the reasons that has contributed to the success of Clemson graduates has been the fact that for four years they lived under this military system, and by their close association unconsciously learned a great deal of human psychology. Our men have come in competition with men from nearly all of the larger colleges and universities over the country, and have invariably shown up well, many times taking the lead. They are taught loyalty, courtesy, neatness and self-reliance. They learn to lead and to be led, and many other qualities necessary to the making of a successful man.

The Textile Department—(C. S. Doggett, Director):

No department of the college has grown more rapidly during the past few years than has the Textile Department. Beginning with 1918-19 and ending with the past session, the number of sophomores, juniors and seniors in the regular four-year textile course has been as follows—23; 50; 58; 66; 79; and last session 88. In the special and short courses the numbers for the same years are 3; 10; 40; 44; 41 and last session 32. The totals would be 26; 60; 98; 110; 120 and 120. From these fig-

ures it will be seen that in six years the textile department has more than quadrupled its number of students.

While possessing a good equipment, the textile department is not well designed for teaching purposes. It lacks quiet rooms for lectures. As soon as we are able we must make a substantial addition to this department. Next to agriculture, the textile industry is the most important in our state, and we must train its leaders.

We have a two-year course in textile industry, but our degree course in textile engineering is predicated upon the same degree of engineering work and the same amount of cultural work as are our courses in civil, electrical and mechanical engineering.

During the session the government has continued its research work with Prof. W. G. Blair and a staff of five experts. This work is under the Bureau of Markets of Washington, and the work as carried on is not only of great service to the cotton industry, but is a stimulus to our students in textile engineering.

As yet the value of the textile department in furnishing leaders for the cotton mill industry of the state has not been fully appreciated by the cotton manufacturers. If it were, we should have every year from every mill in South Carolina a number of promising young men, who having mastered the practical details of cotton mill work, would be sent here for thorough training in textiles and related lines. It is gratifying to note that the Cotton Manufacturer's Association of South Carolina at their meeting in November, 1923 endorsed most heartily the closest cooperation between the Association and the college.

The Chemistry Department—(R. N. Brackett, Director):

This department is charged with the teaching of chemistry and the work of fertilizer inspection and analysis, and also conducts the chemical investigations for the S. C. Experiment Station.

This department has an excellent faculty and staff of workers, and is well equipped for its several lines of work. More than any other department, the graduates in chem-

istry have had the ambition to obtain higher degrees at other institutions, and those who have pursued post-graduate work have without exception given a good account of themselves.

Dr. R. N. Brackett, the director of this department, is completing this year his thirty-third year of service. He is the oldest living member of the Clemson faculty now in active duty. His long connection with the institution has been marked with efficiency and unfailing loyalty.

The Treasurer's Offices—(S. W. Evans, Secretary-Treasurer):

(See report on page 65)

No department of the college deserves higher praise than the Treasurer's Office. Its accuracy and high standards of workmanship have been invariably commended by every auditing board and every inspecting body which has come to the college. With three assistants, the Treasurer performs an immense amount of work made necessary by the detailed itemization of the Board's budget of college expenditures. The total funds handled by the Treasurer during the fiscal year 1923-24 amounted to \$1,694,302.07, these expenditures being represented in not less than twenty-five thousand separate transactions. The report of the Treasurer will be found in the latter part of this report, and is an illuminating document in regard to the many lines of Clemson's expenditures.

The Registrar's Office—(J. C. Littlejohn, Registrar):

The Registrar's office has full authority in the matter of admitting students under the rules governing entrance, keeping of the records and in general in administering the faculty rules regarding all class matters.

The Registrar is a man of unusual ability for this work and his office operates with great smoothness and efficiency. His methods of admission, matriculation, grade recording and the keeping of records of students and graduates has often been studied by other institutions and favorably commented upon and in some cases adopted.

The Library—(Miss Katherine B. Trescot, Librarian*):

At present our Library contains about 30,000 bound volumes, the majority of which are devoted to agriculture. With the beginning of the present session, the Library was divided into two parts, the General Library, and a Reference and Reading Library. A trained Librarian for this latter division was employed, and the work has progressed very satisfactorily.

Public Utilities:

In addition to the various teaching departments, the college has to maintain the usual public utilities found in a small city including heat, light and water plants, pumping stations, water and sewerage distribution, telephones, etc. The cost of our public utilities, including the upkeep of buildings and grounds, is approximately \$60,000.00 annually.

The campus, one of the greatest assets of the college, has been greatly improved by the recent planting of shrubs and the laying of walks and curbings.

The construction and repair division has kept the college buildings and residences in good repair. The total cost for this work amounts to approximately \$12,000. The receipts from the rents of residences is approximately \$11,000 annually, nearly enough to pay the total repair bill for both the residences and the public buildings. The present method of upkeep of the sixty or more residences is to paint all buildings on the outside every fifth year and on the inside every seventh year.

In addition to keeping up the repairs on existing buildings, the superintendent of construction and repairs represents the college in new construction given out by contract.

PART IV. STUDENT LIFE AND INTERESTS.

General Statement:

During this session, the student body was the largest in the history of the college. I am glad to note that there is an

*Resigned September 1, 1924.

evidence of more serious-mindedness and earnestness than in some of our recent years. The restlessness during and immediately following the war seems to be decreasing as evidenced by a more general application to studies and general interest in the work. This may be in part due to the fact that our people have not had so much money. In times of financial depression usually numbers in our colleges increase and a better grade of work is done.

The Cost of Education at Clemson:

It has always been the purpose of the Board of Trustees to keep the cost of education at Clemson as low as possible consistent with reasonable contentment and efficiency.

The following is an exhibit of the required charges. The cost of books, which varies from \$25.00 to \$35.00, depending upon the student's class and course, is not included--

For Session of Nine Months—1923-24.

The total cost to a student for 1923-24 excluding board, laundry and tuition was \$59.40. For those who pay the tuition \$40.00 must be added.

For your information an itemized list of **all** fees and expenses as well as how paid follows:

A. Living Expenses:

| | |
|------------------------------------|------------|
| a. Board at \$16.00 per month | __\$144.00 |
| b. Laundry at \$1.33 1-3 per month | 12.00 |
| c. Heat, light and water at \$2.10 | 18.90 |

| | |
|-----------------------------|-----------|
| Total living expenses ----- | \$ 174.90 |
|-----------------------------|-----------|

B. Fees:

| | |
|-------------------------------|---------|
| d. Matriculation fee ----- | \$ 3.00 |
| e. Hospital fee ----- | 11.25 |
| f. Laboratory fee ----- | 2.25 |
| g. Breakage fee ----- | 3.00 |
| h. Incidental fee ----- | 9.00 |
| i. Student Activity fee ----- | 12.00 |

| | |
|------------------------------|----------|
| Total of required fees ----- | \$ 40.50 |
|------------------------------|----------|

| | |
|---|------------------|
| C. Total Living Expenses and Required Fees | \$ 215.40 |
|---|------------------|

| | |
|---|-----------------|
| D. Tuition for those who pay ----- | \$ 40.00 |
|---|-----------------|

All payments including board and laundry to the College are made quarterly in advance as follows:

| Payable at | High with Tuition | Medium with Free Tuition | Low with Scholarship |
|---------------------------------|----------------------|-----------------------------|-------------------------|
| Entrance -- ---- | \$68.37 | \$58.37 | \$33.37 |
| November 8th --- | 62.35 | 52.35 | 27.35 |
| January 24th --- | 62.34 | 52.34 | 27.34 |
| March 28th ---- | 62.34 | 52.34 | 27.34 |
| <hr/> | | | |
| E. Totals for | | | |
| Session ----- | \$255.40 | \$215.40 | \$115.40 |
| Less Board and Laundry ----- | \$156.00 | \$156.00 | \$156.00 |
| <hr/> | | | |
| F. Total excluding | | | |
| Board and Laundry ----- | \$ 99.40 | \$ 59.40 | \$ * |

* A Scholarship Student would have \$40.60 left over.

In arriving at the "Medium" cost the tuition, \$10.00 a quarter is deducted from each payment under "High". A scholarship student receives \$100.00 in cash and the \$40.00 tuition hence in determining the "Low" cost, \$25.00 (one-fourth of \$100.00 plus \$40.00) is deducted each time.

In determining the total **necessary cost**, the question is whether we should attempt to include clothing, books, and supplies. Clemson acts as a purchasing agent in the purchase of uniforms for the students and each cadet therefore pays to the College Treasurer the cost of this clothing. At colleges where the uniforms are handled by local dealers or where the students do not wear uniforms this item would not appear. The cost of books and supplies is a variable quantity depending upon the class and course of the student. For example, a technical book is much more costly than an academic text book.

The Federal Government aids each student in the Reserve Officers Training Corps—R. O. T. C. Nearly every student is a member of this organization and receives the

benefits therefrom. The present scale of allowances during the four years is:

a. To help pay for uniforms.

| | | |
|------------|-------|---------|
| Freshman | ----- | \$30.00 |
| Sophomores | ----- | 6.00 |
| Juniors | ----- | 30.00 |
| Seniors | ----- | 6.00 |
| | | <hr/> |

\$72.00

b. Commutation for Subsistence (Approximate)

| | | |
|---------|-------|---------|
| Juniors | ----- | \$94.50 |
| Seniors | ----- | 80.00 |
| | | <hr/> |

\$174.50

Total aid from R. O. T. C. which a student may receive during his four years in college -----

\$246.50

The student is also given free transportation and all expenses for one summer training camp. During the six weeks in camp he receives in addition the pay of a soldier.

It will be seen that a scholarship student who belongs to the R. O. T. C. receives his education for a comparatively small sum of money from his own pocket or that of his parent.

During the four years in College it is possible for a scholarship student to receive—

| | | |
|------------------|-------|-----------------------------|
| From scholarship | ----- | \$560.00 (Includes tuition) |
| From R. O. T. C. | ----- | 246.50 |
| | | <hr/> |

Total ----- \$806.50

The State of South Carolina and the Federal Government have made it possible to bring the advantages of a technical college training within reach of every boy who really wants such training.

The Cadet Mess:

Clemson has one of the best kitchens and messhalls to be found anywhere in the country. After the fire of 1921 the plant was rebuilt of sufficient size to meet any reasonable future demands. The messhall and kitchen have tiled floors, are screened, well lighted, heated, and ventilated, and in every way prepared to give the best service for the money paid by the students.

The State Board of Health, which made an inspection in the fall of 1923, complimented this detail of the college organization in the highest terms. Commenting on the messhall Dr. Hayden, the State Epidemiologist says—

“Mess-hall, as usual in splendid condition of cleanliness. Everything about this hall seems to receive the greatest care, and everything needed and desirable seems to be supplied for the comfort, convenience and health of the students.”

“The kitchen, pantry, commissary and laundry are all in spick and span condition as reported last year, and are attractive in every way.”

Barracks Accommodation:

Our increase in attendance has brought about additional problems in the matter of room accommodations. In a great many rooms we are compelled to house three students where we should have only two. Not only do three beds crowd the rooms, but such an arrangement is not good from the standpoint either of health or of study.

A new dormitory is imperatively needed to properly house our present student body and provide for the increased demand which confronts us every year.

The Cadet Hospital:

The health of the student body during the session has been unusually good. There were no deaths and no cases of serious illness. The number of students on sick report was less than one half of the number during the preceding session. The only diseases which approached epidemic form were mumps and measles during the winter of 1924.

Of the total number on the sick report (11,214) 566 were admitted to the hospital. The others were not sufficiently sick to need hospitalization.

Our hospital, built thirty years ago, while meeting our needs, is by no means a credit to the college or to the state, and as soon as possible should be replaced with a modern and up-to-date structure which would cost approximately \$75,000.00

Discipline:

As stated elsewhere in this report, the conduct of the cadet corps during the session has been excellent. The demerit record of the corps was unusually good, 30.3 percent receiving no demerits, and a total of 82 percent receiving below the limit which would debar them from the honor roll. Seven exceeded the limit of demerits and were required to withdraw. One violated his hazing pledge and was required to withdraw.

Upon trial by the Discipline Committee, 4 cadets were suspended and 6 dismissed during the session. Considering the number of students in the corps, this is an excellent record.

Regarding military discipline, this is one of the most important features of the college. Not only does it insure promptness, obedience and courtesy, but it insures as well a time in every day for class work and study. At all times a student is present or accounted for, and it is the policy of the college not to allow student activities or leaves of absence to interfere either with class work or study hours. From 4:00-7:30 p. m. is given to the students for their use in the development of their special interests, but the remainder of the day is claimed by the college for class work and study.

Religious Influences:

Perhaps in no college in the state is a greater effort made to foster the religious and spiritual side of student life.

In the first place, the college contributes to the salary of the four resident ministers and to the Y. M. C. A. Secretary in order that the highest grade men may be available for the preaching and pastoral work among the stu-

dents. Every cadet is required to attend church on Sunday mornings and a fifteen minute devotional service in chapel every week morning except Saturday. The chapel service consists of Bible reading, the singing of a hymn and an invocation, concluding with the Lord's prayer in which the students join. Clemson has its own hymn book, and perhaps no student body in the state knows or sings so well as many hymns as does the corps of cadets of this institution. The ministers of the various churches have free access to barracks and do pastoral work with the students in their rooms as well as in the churches. Out of a student body of 1,036 men at the time the census was taken 86.2 percent were church members.

Under the auspices of the Y. M. C. A. 61 Bible classes are conducted in barracks every Sunday, and these classes have an enrollment of 590 students. These classes are largely led by students themselves. Likewise, fifteen morning watch groups engage in prayer service in barracks every morning with an attendance of 135 students. The Y. M. C. A. conducts vesper services every Sunday evening at which local ministers or visiting preachers or laymen speak. There is also a friendship council whose aim is to render all possible help, moral and otherwise, to students in need of help or advice. Student delegations are sent to all religious gatherings where the college should be represented, and a substantial delegation of students attends the Blue Ridge Conference school every summer.

In addition to these activities, the Y. M. C. A. conducts special services and meetings in order to interest students in the various religious callings.

The Y. M. C. A. building made possible through the generosity of Mr. John D. Rockefeller, is probably the most complete building of its kind in the south. Its present value is not less than \$150,000. It is the social and religious center of the community as well as of the college.

Naturally also, a great many members of the Faculty are interested in contributing to the religious life of the students. A large number of the Sunday School teachers come from the faculty, as do some of the Bible class lead-

ers. It should be remembered too that our present curriculum contains as an optional subject the study of the English Bible.

As an indirect influence for good, there might be mentioned the very wise requirement of the Trustees that every faculty member shall attend the morning chapel service. This provides daily at Clemson the rather unique spectacle of having on the rostrum practically the entire corps of teachers.

Recreation and Student Affairs:

Clemson College is one of the first to set up the control of intercollegiate athletics as a part of the regular college organization. At the December, 1921 meeting of the Board of Trustees, By-laws were adopted by which athletics was organized as a regular division of the college in the Department of Student Affairs. The Athletic Director or Coach is a full professor and member of the faculty, the only difference in his status being that he is not paid from college funds, but from the student activity fee and the receipts of athletic contests. These receipts, however, are handled through the Treasurer's office and disbursed just as are other college funds.

The student activities, including athletics, publications, dances, etc., are under the control of the Director of Student Affairs, a college officer of full professorial rank who gives his entire time to the administration of these matters and also to the administration of the expenditure of the cadet funds received for subsistence and other living expenses. This is a most desirable arrangement and is coming to be followed by other institutions which realize the need of close official supervision of what constitutes the most dynamic part of the college life.

PART V. THE PUBLIC SERVICE.

Clemson College is a great public service corporation of which the collegiate work is only a part.

The non-collegiate public service work of the college may be classified under the following heads—

1. Agricultural research.
2. Agricultural extension service.
3. Agricultural regulatory work.

The total budget for these lines of public service is shown in the following table. It will be noted that the total sum is \$696,218.01, although the expenditures from state appropriations are only \$269,862.85 of this total. In other words, South Carolina is getting nearly three dollars from other sources for every dollar which it appropriates. The total state appropriations for those lines of public service in which 85 percent of our people are vitally interested, is less than 4 percent of the total legislative budget. This represents the entire investment by way of state appropriation in the development of South Carolina's greatest business, the business of agriculture.

Expenditures for Non-collegiate Public Service Fiscal Year 1923-1924.

| No. | ACTIVITY | Appropriations | Appropriations | Funds | Sales, etc. | Totals |
|--------------------|--------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | State (a) | U. S. (b) | U. S. D. A. (c) | Counties (d) | |
| 1. | Agricultural Research | \$ 51,926.47 | \$ 30,000.00 | \$ | \$ 35,834.62 | \$117,761.09 |
| | | | | (j) | | |
| 2. | Boll Weevil Research | 18,851.13 | ..... | 25,000.00 | ..... | 43,851.13 |
| | | (b) | | | (h) | (i) |
| 3. | Extension Service | 110,862.85 | 156,014.49 | 30,260.00 | 112,873.86 | 409,951.70 |
| | | (c) | | | | |
| 4. | Live Stock San. Work..... | 49,401.08 | ..... | 14,521.30 | ..... | 63,922.38 |
| | | (d) | | | | |
| 5. | Tick Eradication | 13,406.15 | ..... | 50,156.31 | ..... | 63,562.46 |
| 6. | Hog Cholera Serum ..... | ..... | ..... | ..... | 18,023.56 | 18,023.56 |
| | | (e) | | | | |
| 7. | Slaughtered Live Stock | 3,325.87 | ..... | ..... | ..... | 3,325.87 |
| | | (f) | | | | |
| 8. | Crop Pest and Diseases | 9,672.49 | ..... | ..... | ..... | 9,672.49 |
| 9. | Fertilizer Insp. and Anal..... | ..... | ..... | ..... | 29,710.29 | 29,710.29 |
| TOTALS..... | | \$257,446.04 | \$186,014.49 | \$119,877.61 | \$196,442.33 | \$696,218.01 |

Note:—Appropriations for calendar year 1924:—(a) \$50,000.00

(b) \$110,862.85; (c) \$50,000.00 (d) \$20,000.00 (e) \$4,000.00; (f) \$10,000.00; (g) Sale of Farm Products; (h) \$112,873.86 counties and misc. sources; (i) \$126,744.33 for Home Demonstration Work by Winthrop College; (j) \$25,000.00 for Boll Weevil research.

1 and 2. Agricultural and Boll Weevil Research— (H. W. Barre, Director):

(See report on page 111)

Agricultural research is at the basis of agricultural teaching and agricultural extension. Although it lacks the popular appeal of extension or of regulatory service which reach directly the farms of the people, yet without agricultural research there would be little to extend through the extension service and little known of how to combat plant and animal diseases and insect pests.

The appropriation for all lines of agricultural research work, including boll weevil research, are shown in the foregoing table from which it will be noted that out of a total for this purpose of \$161,612.22 South Carolina appropriated \$70,777.60.

The Agricultural Research work includes:—

1. The parent experiment station at the college, including the college farm and the college laboratories in the agricultural department.
2. The branch stations located at Florence and at Summerville.
3. The cooperative agricultural research carried on with individual farmers in different parts of the state.
4. Boll Weevill control research, which is in cooperation with the United States Department of Agriculture and is on at Florence, at Clemson, and in cooperation with farmers throughout the state.

A full report of research activities is contained in the admirable report of the Director of Research, (page 111). Probably the most important research work from an economic standpoint consists in the fertilizer experiments and soil fertility studies which for many years have been carried on under ideal conditions at the Florence Station and in cooperation with farmers at nine different places in the state. The discoveries made here as to the best kind and amount of fertilizers to be used probably saves the farmers of South Carolina every year on their twenty to thirty million dollar bill for fertilizers more than the

cost of operating this station for a decade. Research along lines of agricultural problems of state-wide importance is a very profitable investment even when only a little is accomplished. For instance it is estimated that the discovery by our research workers of a method of controlling boll rot of cotton is adding a half million dollars to the wealth of the state each year. The work of the station in developing wilt resistant varieties of cotton, notably the Dixie-Triumph, is probably worth to the state every year the cost of research for many years.

Probably the most important research work carried on during the session is the boll weevil research work at the Florence Station. This work has been developed and supplemented by work at the Clemson and Coast Stations, and on farms in a dozen counties. The results of this research appear in a special bulletin which has been prepared and distributed. Already important conclusions have been reached. The bitter controversy as to the best method of poisoning the weevil has been settled and our agricultural leaders and scientists now agree on simple and effective methods of poisoning this destructive pest. This is not only saving to our people the thousands of dollars formerly expended for worthless poison but makes possible a material increase in per acre yield through effective weevil control. Our agronomic and physiological studies are developing practices for producing cotton under boll weevil conditions which indicate that much larger yields can be produced the average season with minimum applications of poison.

The indications are that probably even more important results await further investigations. The difference in temperature and rainfall make it impossible to draw final conclusions from two years' work. In order that the results may be authoritative, they must cover a number of years under the usual variations of soil and climate. In the end there is no question but that science will evolve still more effective means of controlling the boll weevil and enable cotton to be produced profitably.

2. Extension Service—(W. W. Long, Director):

(See report on page 92)

The total funds disbursed for extension service are shown in the preceding tabulation to be \$409,951.20. Of this amount \$30,200.00 was disbursed by the Treasurer of the United States and \$102,873.86 by County Treasurers. In both cases the vouchers were approved by our Director of Extension. Of the total amount expended for extension service, Winthrop College acting as our agent, expended \$110,707.28 for Home Demonstration Work for women. Needless to say this work was done with that thoroughness characteristic of every task which Winthrop undertakes.

The Smith-Lever Act was accepted by the legislature in 1914. The required state appropriation under this act increased annually from 1914 until a maximum of \$110,862.85 for the fiscal year July 1, 1922 was reached. At this annual figure it will continue. Under the Smith-Lever act the Federal government was to put up an amount equal to the state's contribution plus \$10,000. Due however, to additional appropriations made during the war period and continued since, the Smith-Lever act is now yielding per fiscal year \$156,014.49. In addition the U. S. Department of Agriculture made a contribution to the extension work of \$30,200.00.

The extension service is becoming more and more a vital part of the state's agricultural life. In every agricultural emergency and for every kind of agricultural service, the people turn to the college as their first and authoritative source of help and information. In all state-wide movements for agricultural improvements, and especially during the past year in the organization of state wide marketing associations, the extension service has rendered unique and valuable service.

Mr. Long's report covering the extension service for the year begins on page 92 of this report. Its reading must convince any one of the value of the extension service, never greater than at times of depression or demoralization among our farmers. So thoroughly is the extension service

entrenched in the confidence of the people that our greatest difficulty today is in meeting the many demands made upon the agents and upon the specialists.

The greatest task in the extension service will always be the selection of satisfactory men for the positions of county agents. The value of a good agent cannot be estimated in money, and any salary is too great for an agent who is a misfit. Only through a course of years and by careful selection based solely upon merit will each county be supplied with just the type of man needed. It is the policy of the extension force to donate \$1,500 to the salary of each county agent. The total salary which the agent receives depends upon the additional fund from the county. In county agents as in everything else, the higher salaries attract the best men.

3. Regulatory Service:

Clemson College is the agent of the legislature in carrying on practically all of the public service which has an agricultural background, and including those lines of regulation which are not always popular, but which are necessary in the protection as well as the development of an agricultural industry. Because the college is a non-political and scientific organization, it is better prepared to do the agricultural regulatory work than any other agency in the state. The county and home demonstration agents representing the extension service and located in every county of the state, constitute the eyes and ears for the regulatory officers in combating live stock and plant diseases and insect pests.

Most colleges dislike regulatory service because of its police features. Clemson College, however, has felt that the benefits to agriculture were sufficient to justify the legislature in making the college its agency, even in lines of work which must of necessity make some enemies of the institution.

The regulatory service of the college includes the following lines—

- (a) Fertilizer inspection and analysis.
- (b) Control of crop pests and diseases.
- (c) Tick eradication.
- (d) Live stock sanitary work.

(a) Fertilizer Inspection and Analysis—(R. N. Brackett, Chief Chemist, H. M. Stackhouse, Secretary):

(See reports, pages 144 and 146)

Under the laws of the state the Board of Trustees is charged with the inspection and analysis of commercial fertilizers sold within the state. A committee of the Board of Trustees known as the "Board of Fertilizer Control" gives special oversight to the enforcement of the fertilizer laws. Mr. J. E. Wannamaker, of St. Matthews, is the Chairman of this Committee.

The work of inspection is under the immediate charge of Mr. H. M. Stackhouse, Secretary of the Board, and the cost is paid from the fertilizer tag tax. The analysis is done by skilled and experienced chemists in the chemistry department under the supervision of the Chief Chemist, Dr. R. N. Brackett. Full reports from both of these officers are to be found with this report.

Mr Stackhouse's report of the 1923-24 sales shows 849,328 tons of fertilizer and 32,026 tons of cotton seed meal. The total tonnage was 881,369 tons as compared with 678,695 tons in 1922-23 and 507,068 tons in 1921-22. The total number of samples analyzed was 1,450 as compared with 1,372 in 1922-23.

(b) Crop Pests and Diseases—(H. W. Barre, State Pathologist; A. F. Conradi* State Entomologist):

(See report on page 160)

The Crop Pest Commission having supervision of the work is constituted under the laws of the state to safeguard the agricultural interests against the importation of diseased seed, nursery stock and the introduction and spread of insect pests and plant diseases. It is the plant

* Resigned Sept. 1, 1924. Succeeded by D. F. H. Lathrop,

board of health for South Carolina. The Agricultural Committee of the Board constitutes the Crop Pest Commission, and Mr. J. E. Wannamaker of St. Matthews is the Chairman.

Nothing today stands between the farmers and ruin except the scientific men who are doing research work to discover methods to combat plant diseases and insect ravages. The State Entomologist and the State Pathologists and their assistants keep up the defenses against invasion and devise new methods to fight new enemies which break through and enter the state. Any one unfamiliar with the work of the Crop Pest Commission will be interested and astonished to read of its many activities in the full report which is appended hereto. Probably no investment of \$10,000.00 by the state brings larger returns than the appropriation which supports the work.

In summing up the work of this commission for the past year, it is interesting to note the scope of the work in the state. In all but ten counties of the state, some type of inspection service was carried on. These inspections include nursery, sweet potato, cabbage and tomato. A total of 384 different plantings were inspected, many of these plantings requiring two or three inspections. This gives some idea of the enormous volume of work involved. The people throughout the state generally realize to a greater degree that the efforts of the commission are helpful and are intended to promote the welfare of the farmer.

(c) Tick Eradication—(W. K. Lewis, State Veterinarian):
(See report on page 168)

The remaining stronghold of the cattle tick is in the coastal plain section of the state. Gratifying results were obtained in those counties and areas where the stock law was observed. In many sections, however, no effort was made on the part of live stock owners to keep up their stock, and as a result no substantial progress was made in tick eradication. Unfortunately the tick eradication laws lack the necessary teeth for their enforcement. The following is quoted from the State Veterinarian's report—

"The tick infested areas are still confined to the coastal plain counties. The work was vigorously prosecuted in all infested areas during this season, with the exception of Berkeley County and the northeastern portion of Charleston County, and splendid results were obtained. The few infested premises that will remain in each county after the close of the season will be kept under close supervision to prevent, as far as possible, a spread of infestation during the winter months. The pernicious habit of livestock owners, however, in turning their cattle at large during the winter months is a great menace and makes it necessary to rework large areas each year until the final completion of the work.

"Owing to the lack of cooperation on the part of the cattle owners and representative citizens, the entire area of Berkeley County and the northastern portion of Charleston County were placed under Federal and State quarantine May 15, 1924. It is hoped that the conditions in the re-quarantined areas will warrant the re-establishment of the work next spring.

"The benefits derived from Tick Eradication are so apparent that it is needless to dwell upon that phase of the work. It is sufficient to state that Tick Eradication has made and is making it possible for the safe importation of purebred and high grade cattle of both dairy and beef types, the consequent improvement of our native cattle and the establishment of an industry that will ultimately become one of our leaders."

The expenditures for this work from January 1st to October 31st, 1924, were as follows—

| | |
|--------------------------|-------------|
| From Federal funds ----- | \$31,927.26 |
| From State funds ----- | \$17,451.57 |

It will be noted that the federal department has generously contributed over two dollars for every dollar that the state has expended.

(d) Live Stock Sanitary Work—(W. K. Lewis, State Veterinarian):

(See report on page 168)

The live stock sanitary work includes tuberculosis eradication, hog cholera control, the investigation and control of contagious outbreaks, and quarantine activities against the introduction of diseased live stock.

This work is supported by an annual appropriation of \$50,000. The headquarters for the work is the Liberty National Bank Building, Columbia, S. C. Here the state veterinarian has his office, and the assistant state veterinarians not stationed at strategical points in the state, work out from Columbia. Here, too, a laboratory is maintained for the purpose of making tests in order to confirm the diagnoses made by the field veterinarians. In this laboratory is carried on important research work relating to the parasites which are to be combatted in South Carolina.

The force that carries on this work consists of the state veterinarian, jointly employed and paid by the college and the U. S. Department of Agriculture, ten veterinarians stationed at different points in the state, twenty-five private veterinarians who act as deputy veterinarians on a per diem basis when their services are needed, and a number of veterinarians and inspectors having supervision in the tick eradication work.

The scope of the work may be visualized by the following data—

| | |
|---|---------|
| Number of investigations conducted ----- | 3,744 |
| Miles travelled in answering calls for service -- | 112,734 |

The magnitude of the tubercular work will be appreciated when it is stated that 1,533 herds were tested during the year for tuberculosis. In these herds were 15,693 dairy cattl, of which number 76 were found to be tubercular and were killed. Since November 1, 1917, 70,603 cattle have been tested and 1,053 found to be tubercular. Since the transmissibility of tuberculosis from the dairy cow to the human is no longer doubted, this work is of great importance from a public health standpoint.

The treatment of hogs for cholera is another one of

the large activities carried on by this office. There has been a very marked decrease in the number of outbreaks during the past year as compared to former years, and even the previous year, when 59,691 hogs were treated. The total value of the serum and virus and other biologics which were distributed on a cost basis amounted during the year under consideration to \$26,338.12.

The sale of hog cholera serum is handled on a revolving basis, no appropriation being required for the purchase of the serum, this being sold to farmers at cost. The treatment of the hogs and the control of outbreaks of cholera are handled by assistant state veterinarians and their deputies and assistants, the double treatment being now advocated. Thru this preventive measure the outbreaks of hog cholera and their severity have been greatly lessened.

CHAPTER II.—APPROPRIATIONS FOR 1925.

PART 1.—APPROPRIATIONS FOR COLLEGE WORK.

For nearly a third of a century Clemson College has been operated on the fertilizer tax. In 1915-16 when this source of revenue greatly declined, a loan of \$62,400.00 was made. This loan was repaid during the following three years. During the period of 1918-20, the costs of college operation greatly increased, and following the year of maximum receipts, 1920, the fertilizer tax again fell off to such an extent that it was necessary for the legislature to supplement the college resources either by a loan or by an appropriation. In 1921 a loan of \$112,842.11 was granted, and again in 1922, \$150,00.00. When it became obvious that the college would require every year a supplementary income, the legislature in 1923 wisely abandoned the method of having the State Treasurer lend the college money and made a direct appropriation instead.

The following table will be of interest as showing the growth of the fertilizer tax on the one hand and the college attendance on the other. The necessity for the loans and for the appropriations which have been made is easily apparent when this table is studied. As a matter of fact, appropriations would have been much sooner necessary, but for the fact that during the first five years of the period shown the college was paying for a good deal of state work of a non-collegiate character out of the fertilizer tax receipts. In 1914 the state began to make appropriations for these non-collegiate activities, and that relief put off the day of asking for direct appropriations. However, the increased attendance and the increased cost of operation will make necessary from this time on a substantial annual appropriation to meet the operating costs of the college and provide for its growth.

Enrollment 1909-10 to 1924-25.

Fiscal Statement * July 1, 1909—June 30, 1925

| Fiscal Year | Fertilizer Tax ** | State Appropriation or Loan | College Session | Sum. Session | Total | Grads |
|-------------|-------------------|-----------------------------|-----------------|--------------|-------|-------|
| 1909-10 | \$226,980.96 | None | 650 | 3 | 653 | 77 |
| 10-11 | 264,374.08 | None | 683 | 20 | 703 | 87 |
| 11-12 | 221,000.00 | None | 804 | 7 | 811 | 92 |
| 12-13 | 231,500.00 | None | 819 | 15 | 834 | 74 |
| 13-14 | 276,000.00 | None | 800 | 18 | 818 | 78 |
| 14-15 | 155,859.76 | None | 819 | 0 | 819 | 107 |
| 15-16 | 171,018.52 | 62,400.00 (loan) | 802 | 148 | 950 | 118 |
| 16-17 | 237,943.93 | None | 853 | 124 | 977 | 110 |
| 17-18 | 268,721.68 | None | 804 | 0 | 804 | 113 |
| 18-19 | 258,477.10 | None | 825 | 132 | 957 | 99 |
| 19-20 | 313,472.54 | None | 886 | 128 | 1014 | 141 |
| 20-21 | 167,505.16 | 112,842.11 (loan) | 847 | 234 | 1081 | 124 |
| 21-22 | 126,118.07 | 150,000.00 (loan) | 1007 | 301 | 1308 | 132 |
| 22-23 | 169,717.53 | 90,856.66 (Appr.) | 1008 | 478 | 1486 | 134 |
| 23-24 | 220,329.00 | 91,813.14 | 1057 | 535 | 1585 | 128 |
| 24-25 | 225,000.00 | 99,250.35 | 1141 | 591 | 1648 | 145 |

* Not including Public Service supported by special state or U. S. appropriations.

** Income from other sources now about \$75,000.00 annually.

Loan of 1915-16 repaid within three years.

Figures for 1924-25 are estimates.

COLLEGE ACTIVITY.**Calender Year 1925.****Estimated Expenditures:**

| | |
|--|--------------|
| 1. Superintendence and records | \$ 30,341.50 |
| 2. Collegiate Instruction | 270,552.92* |
| 3. Upkeep of Buildings and Grounds | 59,006.06 |
| 4. Public Utilities | 25,736.00 |
| 5. Summer School | 5,000.00 |

| | |
|-----------------------------------|---------------------|
| Total Normal Budget | \$390,636.48 |
| 6. Dormitory for 200 cadets | 100,000.00 |

Grand total **\$490,636.48**

| | | |
|--|--------------|---------------|
| 8. Interest on Clemson Bequest ----- | \$ | 3,512.36 |
| 9. Interest on Landscrip ----- | | 5,754.00 |
| 10. Morrill and Nelson Funds (U. S.) ----- | | 25,000.00 |
| 11. Estimated Tuition and Fees ----- | | 20,000.00 |
| 12. Estimated Rents and Misc. Receipts ----- | | 20,000.00 |
| | | <hr/> |
| | | \$74,266.36 |
| 13. Estimated Fert. Tax, 1924 | \$225,000.00 | |
| Less cost of inspection ----- | 36,880.00 | —\$188,120.00 |
| | | <hr/> |
| | | \$262,386.36 |
| 14. Est'd balance January 1, 1925 | | 28,999.77 |
| | | <hr/> |
| | | \$291,386.13 |
| 15. Necessary State Appropriations: | | |
| (a) For maintenance (sal's) | \$99,250.35 | |
| (b) For buildings (Dom'y) | 100,000.00 | 199,250.35 |
| | | <hr/> |
| Grand Total ----- | | \$490,636.48 |

* Includes \$22,300. for scholarships.

General Comments on the Budget:

The budget presented represents a normal budget as appropriated by the Board of Trustees at their meeting last June for the fiscal year 1924-25. It is not materially different in amount from the budget of 1923-24. Some confusion is necessarily caused by the fact that the calendar year 1925 represents one half of our 1924-25 budget and one half of the 1925-26 budget, which latter budget is not yet made and cannot with certainty be predicted.

The legislature is requested to authorize the expenditure of Items 1—5 inclusive, contributing an appropriation of \$99,250.35 to "Personal Service", included in Item 2, "Collegiate Instruction". It would seem unwise to cover into the Treasury our estimated receipts of \$291,386.13 and burden the budget by over a quarter of a million dollars through re-appropriating this amount. The simplest and most logical plan is to appropriate only the amount necessary to be added to the other sources of income to maintain the work of the college at its present scope and level.

The cost of materials for shops and laboratories, and also the cost of equipment is still at a high level, and the cost is increased in proportion to the increased attendance.

EXPLANATION OF BUDGET ITEMS.

1.—Superintendence and Records—(\$30,341.50)

Under this heading are included the salaries of teachers and the cost of operating the offices of the President, the Treasurer, the Registrar and the Director of Student Affairs. Aside from salaries the largest items are for travel, including the travel of the Trustees, Boards of Visitors, Legislative Committees, etc.

The amount under this heading (1) is about the same as the estimate for 1924, which was \$29,776.18.

Item 2.—Collegiate Instruction—(\$270,552.92)

Under this heading are included salaries, insurance, supplies for shops and laboratories, educational equipment and minor structural improvements. It also includes \$22,300.00 for scholarships.

The scale of salaries at Clemson is very moderate. Even during the period of inflation the total increase in our salaries was only about 22 percent. In technical colleges such as Clemson, salaries are usually higher than in non-technical colleges because they have to compete with business corporations as well as with other colleges. In spite of that fact, the average salary at Clemson is probably lower than at any other state college for men, except the negro college at Orangeburg.

The figures below, compiled by the U. S. Bureau of Education in December 1922, show the average of 73 colleges and universities as compared with the averages at Clemson. At Clemson **no rent-free houses or other perquisites are given.** Each officer receives a cash salary and nothing more.

Salary Comparisons:

| Averages of 73 Colleges and Universities | Pres. | Deans or Director | Profs. | Assoc. Profs. | Asst. Profs. | Instr's |
|--|---------|----------------------|---------|------------------|-----------------|---------|
| Clemson | \$8,482 | \$4,250 | \$3,392 | \$2,800 | \$2,300 | \$1,800 |
| Averages -- | 6,000 | 3,650 | 2,808 | 2,288 | 2,035 | 1,625 |

The item for shop and laboratory **supplies** at a college like Clemson, where the Freshman and Sophomore classes take a good deal of shop work, is necessarily large because of the consumption of steel, iron, wood, chemicals, glassware, etc. The college must pay these costs unless we follow the fashion of many other colleges of requiring the students to pay a shop and laboratory fee to cover them.

The item for **educational equipment** is also large in a technical college. Evidently most of the colleges classify this under operating expenses. It includes electrical instruments, microscopes, balances, pruning shares agricultural implements, and a hundred other items necessary to give technical instruction and to keep technical laboratories up-to-date. To withhold these necessary facilities for teaching would be to betray the trust of students whose money and precious time are being devoted to the pursuit of an education.

Item 3. Upkeep of Buildings and Grounds—(\$59,006.06)

Clemson College is a small village, consisting of twenty or more public buildings and more than sixty residences for teachers and officers. Not only must these buildings be kept in repair, but from time to time minor changes and additions are necessary due to increased demands as our attendance increases. The college property of 1,560 acres, has twenty-one miles of road and about five miles of concrete and dirt side walks. The upkeep of these is an item of no small expense and importance.

During the session the chapel was enlarged and remodelled, making the seating capacity 1,850. This should fill our needs in this respect for several years to come. The remaining work on our toilet buildings was completed during this year, putting all of these in good condition, and up to the standard recommended by the State Board of Health. Also, the basement under the chapel was converted into class rooms and laboratory for the use of the physics division, a much needed change. Our physics division now has ample room for many years to come.

Item 4. Public Utilities—(\$25,736.00)

Situated as it is in the country, Clemson has to maintain such public utilities as a heat, light and water plant, pumping stations, sewer system and the usual features of law enforcement common to a small village. Our coal consumption alone amounts to nearly 3,500 tons annually, representing over \$20,000 in money. The amount budgeted in 1924 under this item was \$26,524.00.

Item 5. Summer School—(\$5,000):

From small beginnings in 1910, Clemson College has gradually built up the second largest summer school in the state. During the summer of 1923 we had an attendance upon this summer school of 591 students. In addition we had 552 club boys, county agents and Smith-Hughes teachers who were here for conferences of a few day. This great increase in attendance makes necessary a substantial increase in the summer school teaching force. The regular college facilities furnish the necessary shop, laboratory and library equipment used by the summer school students.

The amount budgeted for the summer school in 1923 was \$1,500, which left quite a deficit on the summer school operations for 1923.

Item 6. Dormitory for 200 cadets—(\$100,000):

This is the first building at Clemson for which the legislature has been asked to appropriate money. This dormitory has been needed for several years past, but we have now come to the point where we can not longer do without it. This fall 1924 we had 658 new students to seek admission. We actually admitted 450, or approximately two-thirds of those who applied. Not all who were refused were prepared to enter, but the number of applicants indicates to some extent the demand for the kind of education which Clemson is giving. At the opening of this session we had to put **three men to the room in 211 rooms**, a condition unsatisfactory from the point of convenience, sanitation and of study. The additional dormitory

would relieve the present congestion. These could be handled without any material increase in the operating costs of the college.

The college plant at Clemson is incomplete in that it lacks a library building, a gymnasium and a suitable hospital. Additions to the textile, engineering and agricultural buildings are also badly needed.

PART 11.—APPROPRIATIONS FOR PUBLIC SERVICE.

The college is submitting **exactly the same estimate** for non-collegiate public service as was submitted in 1924. More work could be done if more money were available, but recognizing the condition of the state it has not been thought wise to suggest increases or extensions of the service for 1925. In the statement below there appears in the first column of figures the appropriations requested of the legislature. In the second column appear the funds which are received from other sources—

Cost of Public Service—1925:

| Activity | Legislative Appropriations Requested | Income from Other Sources | Total Resources |
|---|--|---------------------------------|--------------------|
| 1. Fertilizer Ins. and Anal. | \$ | 36,880.00 | \$ 36,880.00 |
| 2. S. C. Expt. Station | | 69,500.00 | 69,500.00 |
| 3. S.-L. Extension Service..... | 110,862.85 | 156,014.49 | 266,877.34 |
| 4. Agricultural Research | 50,000.00 | | 50,000.00 |
| 5. Boll Weevil Control | 25,000.00 | | 25,000.00 |
| 6. Crop Pests and Diseases | 10,000.00 | | 10,000.00 |
| 7. Live Stock Sanitary Work | 50,000.00 | | 50,000.00 |
| 8. Tick Eradication | 20,000.00 | | 20,000.00 |
| 9. Slaughtered Live Stock ... | 4,000.00 | | 4,000.00 |
| 10. Hog Cholera Serum | | 50,000.00 | 50,000.00 |
| Totals Budgeted | \$269,862.85 | \$312,394.49 | \$582,257.34 |
| 11. Funds administered but not actually handled by C. A. C.: | | | |
| (a) No. 3, From Counties, etc. | | \$145,830.00 | \$145,830.00 |
| (b) No. 5, U. S. Dept. Agri..... | | 25,000.00 | 25,000.00 |
| (c) Nos. 7 and 8, U. S. D. A..... | | 30,000.00 | 30,000.00 |
| Totals Available— | | | |
| Public Service | \$269,862.85* | \$513,224.49 | \$783,087.34 |

* Same as 1924 appropriation.

It will be noted from the table that for its appropriation of \$269,862.85 the state receives an agricultural service estimated at \$783,087.34. The lines of public service covered by the state's appropriations are so well known to the citizenship of the state and to members of the General Assembly that little explanation should be necessary.

Items 1, 2. 10—(No Appropriations Requested):

The fertilizer inspection and analysis, \$36,880.00, is paid from the fertilizer tax receipts. The S. C. Experiment station, \$69,500.00, is paid from the Federal Hatch and Adams funds and the sale of farm products. The Hog Cholera Serum distribution, \$50,000.00, is financed from the sale of serum and biologics which are furnished to the farmers of the state at cost.

Item 3. Smith-Lever Extension Service—(\$110,862.85):

In 1914 the state of South Carolina accepted the terms of the Federal Smith-Lever Extension Act. This act provided for definite appropriations by the federal government on condition that certain moneys would be provided in the state. The annual appropriation made by the legislature reached its maximum in 1922 and the request for this year is the same as for the past three years. Through supplementary legislation the federal appropriations have been increased beyond the terms of the original Smith-Lever Act so that the state receives annually \$156,014.49.

The extension service is the only state-wide agricultural organization to which the state contributes, and which is maintained for the benefit of the people on the farms. It includes also the home demonstration work administered from Winthrop College, \$110,707.28 being expended in that line of service.

Item 4. Agricultural Research—(\$50,000.00):

This is the same amount that has been appropriated heretofore, and represents the necessary supplementary funds to support the research work at the college, at the coast station near Summerville, and at the Pee Dee Station at Florence. This \$50,000 represents the entire amount

spent by South Carolina for research work in that great profession in which 85 percent of our people are directly concerned. A single discovery which will even slightly reduce the large fertilizer bill of the state, or save an additional boll of cotton, or check the ravages of some plant disease or insect pest, may easily be worth to the state in a single year the cost of all its research work for several decades.

The development of certain strains of wilt resistant cotton, notably the "Dixie-Triumph" is worth to the south more than the cost of the agricultural research for 100 years.

Item 5. Boll Weevil Control—(\$25,000.00):

This appropriation was made for the first time in 1923 to enable the college to accept the proposition from the Federal Department of Agriculture to establish a parent station at Florence for investigating the various methods of poisoning and other processes looking to the control of the boll weevil. The work accomplished at this station appears in a special publication issued by the college in December 1923. The importance of the results already obtained can hardly be over-estimated and the field of study is too important and too attractive to be abandoned. It is evident from the results obtained at the Florence Station that poisoning is only one method and perhaps not the most important for producing cotton under boll weevil conditions. In the right variety, proper spacing, proper fertilization, and proper cultivation are likely to be found the most significant answers as to how cotton can be produced under boll weevil conditions.

Item 6. Crop Pests and Diseases—(\$10,000.00):

For this work no increase is requested. Perhaps no single appropriation for control work is more important or productive than this. But for the vigilance of the State Entomologist and the State Pathologist and their assistants, South Carolina would soon be the dumping ground for diseased seed, plants and nursery stock and be an unprotected territory for the invasion of plant diseases and

insect pests. Many serious pests and diseases are at South Carolina's door and some of them have already gained a foothold. The work of the Crop Pest Commission is the sole protection which the state has against increased loss. The U. S. Department of Agriculture in a recent publication estimated that the loss in South Carolina due to plant disease alone amounted to more than twenty million dollars annually.

Item 7. Live Stock Sanitary Work—(\$50,000.00):

No increase in this appropriation over former years is asked, although double the amount could be well spent in the protection and promotion of an industry which represents in money more than the cotton crop of the state. The Live Stock Sanitary Board, which is in charge of the live stock sanitary work, is to live stock what the State Board of Health is to humans. Protection against the importation of diseased live stock, the control of contagious outbreaks such as hog cholera, anthracnose, blackleg, etc., and testing of dairy cows for tuberculosis, are a few of the activities of our sanitary office located at Columbia. With the necessity under boll weevil conditions of turning to a more diversified agriculture the amount and value of live stock has steadily increased. This is testified to by the excellent live stock exhibits at the last State Fair. As the industry increases the demand for veterinary service also increases. The appropriation requested represents less than one-tenth of one percent of the value of the live stock in South Carolina expended for its protection.

Item 8. Tick Eradication—(\$20,000.00):

The amount for tick eradication likewise remains unchanged. But for the free range conditions in certain counties and the lack of cooperation in certain parts of other counties, tick eradication work in South Carolina would now be completed. It is to be hoped that no further exemptions will be granted under the live stock law of the state. Such exemptions not only hinder the work in the territories concerned, but are taken as an example by those other sections who do not want to obey the law.

During the past year the Federal Department of Agriculture has been most liberal towards the tick eradication work in South Carolina, donating up to October 31st, \$31,-927.26, almost twice as much as the state appropriates.

Item 9. Slaughter of Diseased Live Stock—(\$4,000.00):

This appropriation is for the purpose of reimbursing live stock owners for animals already destroyed by the state veterinarians in the control of contagious diseases.

In General:

In presenting these appropriations, the college does not come as a suppliant begging that they be made. The college regards itself rather as an **agent** of the legislature to carry out willingly and efficiently whatever lines of public service the legislature endorses and to whatever extent it is willing to support them. The duty of the college is to recommend what is needed. It is for the legislature to say how much of the service indicated should be done. The college does not feel that less should be appropriated than the amounts indicated unless the work is to be reduced in volume and in value to the agricultural people of the state.

Respectfully submitted,

S. B. Earle,

Acting President, The Clemson Agricultural College.
of South Carolina.

The following reports are included in the full report:

| | |
|--|-----|
| 1. The Treasurer | 65 |
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CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.

Abbeville County

Pay Tuition—

Davis, L. B., Due West,
Graves, P., Due West,
Moore, W. H., Abbeville,
Roche, T. G., Abbeville

Free Tuition—

Carlisle, H. L. Abbeville,
Hagan, C. M., Due West,
Price, D. A. Abbeville,
Roche, A. O., Abbeville,

Scholarship—

Klugh, J. B. Abbeville,
Tate, H. S., Abbeville,

Aiken County

Pay Tuition—

Haskell, A. C., Augusta, Ga. Rfd.
Hendrix, F. S., Aiken,
Kershaw, John., N. Augusta,
Mitchell, R. H., N. Augusta,
Salley, K. F., Salley
Salley, H. D., Salley
Sawyer, G. W. Monetta,
Sudlow, W. H. Aiken,
Wyman, H. V. Aiken,

Free Tuition—

Byrd, D. A., Graniteville.
Carpenter, J. D., Aiken,
Floyd, A. R., Augusta,
Garvin, B. W., Severin,
Garvin, C. W., Severin,
Howard, H. H., Graniteville,
Johnson, C. P. Aiken,
Salley, C. T. Salley,
Salley, L. J., Salley,
Simkins, L. H. Augusta, Ga.
Stelling, R. N., Augusta, Ga.
Weeks, W. S. Aiken,
Woodward, T. E. P., Aiken,

Scholarship—

Culler, R. B. Kitchens Mill,
Gunter, O. C. Wagner,
Weathersbee, A. A., Ellington

Allendale County

Pay Tuition—

Calhoun, W. B., Baldock,
Googe, W. J. Fairfax,
Guess, J. P., Appleton,
Henry, S. W., Allendale,
Lawton, B. M. Lena,
Stoney, P. D. Allendale,

Free Tuition—

Brodie, G. H. Salley,
Keel, J. H. Allendale,

Scholarship—

Metz, A. F. Baldock,
Tison, P. H. Allendale,
Youmans, M., Fairfax,

Anderson County

Pay Tuition—

Beam, F. A. Pelzer,
Brown, W. C., Belton,
Brown, W. F., Anderson,
Chapman W E., Denver,
Corn, H. E., Anderson,
Cox, F. M., Belton,
Cummings, R. L., Belton,
Dalrymple, C. L. Pendleton,
Dean, F. F., Anderson,
Eargle, J. E., Starr,
Gilmer, F. S. Anderson,
Griffin, R. L. Anderson,
Griffin, J. K., Belton,
Guyton, J. C. Williamston,
Hanks, S. H., Iva,
Herron, J. L., Starr,
Jones, J. T., Starr,
Jones, P. C., Starr,
Keasler, G. S., Pendleton,
Lander, A. M. Pelzer,
Littlejohn, C. M., Belton,
Lyons, J. J., Anderson,
McGee, E. T., Starr,
McGill, C. A., Anderson,
McLees, F. C., Townville,
Major, J. D. Belton,
Pearman, S. N., Starr,
Pepper, W. C. Anderson,
Pruitt, A., Anderson,
Pruitt, B. A., Anderson,
Pruitt, J. M. Anderson,
Pruitt, R. S., Anderson,
Richardson, M. B., Pendleton,
Sligh, W. D., Anderson
Smith, B. M., Starr,
Smith, J. E. 2nd., Pendleton,
Stevenson, N. W., Anderson,
Stewart, E. C. Pelzer,
Strickland, P. Belton,
Strickland, P. E., Belton,
Todd, J. A., Starr,
Wallace, J. C., Pendleton,
Welborn, H. W., Pendleton,
Wilson, G. C., Starr,

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND SCHOLARSHIPS—(Continued)

Free Tuition—

Acker, T. T., Anderson,
Aiken, C. C., Anderson,
Alexander, S. R., Anderson,
Babb, J., Pelzer,
Burris, A., Anderson,
Cannon, J. P., Honea Path,
Chapman, W. F. Belton,
Cheek, T. H., Iva,
Chrietzberg, C. H., Williamston.
Cooper, J. R., Belton,
Darby, J. M., Sandy Springs,
Devenport, O. F., Belton,
DeYoung, D. F., Belton,
Drake, E. W., Belton,
Elliard, W. J., Pelzer,
Harrison, N. A., Sandy Springs
Harrison, R. H., Sandy Springs
Herrard, F. H., Anderson,
Hall, F. B., Iva,
Hawkins, C. E., Starr,
Heller, W. F. Sandy Springs,
Hodges, B. H., Starr,
Jackson, R. A. Starr,
Jackson, S. L. Starr,
Lewis, J. G. 2nd., Williamston,
Little, T. R. Starr.
McClellan, G. W., Anderson,
McCuen, W. M., Belton.
Marshall, J. C., Anderson.
Murphy, T. J., Anderson.
Nickels, W. D. Pelzer.
Patterson, S. N., Williamston.
Pruitt, J. H., Anderson.
Pruitt, W. H., Anderson.
Rogers, C. M., Pelzer.
Smith, E. T., Anderson.
Stear, G. M., Anderson.
Stokes, G. L., Iva.

Scholarship—

Agnew, J. C., Anderson.
Bessie, M. B., Anderson.
Burris, W. T., Anderson.
Cromer, N. C., Belton.
Farmer, W. A., Anderson.
McAlister, L. C., Pendleton.
Massey, L. B., Pendleton.
McKlesimer, D. L., Piedmont.
Mead, L. B., Anderson.
Smith, E. L., Anderson.
Smith, G. A., Anderson.
Weigle, C. C., Belton.

Bamberg County

Pay Tuition—

Barham, H. K., Bamberg.
Faust, C. C., Denmark.
Mayfield, J. T. Denmark.

Free Tuition—

Brabham, L. C., Ehrhardt.
Price, G. E., Bamberg.
Price, L. C., Bamberg.
Sojourner, J. H., Bamberg,
Zeigler, R. L., Bamberg

Scholarship—

Jones, R. C., Bamberg.

Barnwell County

Free Tuition—

Hair, D. H., Blackville.
Hutto, D. F., Denmark.
McKerby, J. B., Elco.
Ray, W. S., Blackville.
Sanders, E. G., Blackville.

Scholarship—

Hutto, S. G., Denmark.
Turner, C. M., Ellington.
Walker, J. E., Blackville.
Youngblood, J. E., Elco.

Beaufort County

Pay Tuition—

McDaniel, S. W., Beaufort.
McLeod, C. E., Beaufort.
Marshall, R. M. Jr., Beaufort.
Robinowitz, Beaufort.

Free Tuition—

Evans, J. K., Beaufort.
Sanders, E., Okater.

Berkley County

Free Tuition—

Harvey, O. J., Summerville.

Scholarship—

Rudloff, C. N., Pinopolis,
Smith, J. E. 1st., Pinopolis.

Calhoun County

Pay Tuition—

Cox, H. A., St. Matthews.
Edwards, R. M., Elloree.
Hane, J. K., Fort Motte.
Weeks, T. H., Elloree

Free Tuition—

Hane, W. W., Fort Motte.
Taber, W. P., Fort Motte.

Scholarship—

Herlong, E. S., St. Matthews.
Smoake, G. W., St. Matthews.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND SCHOLARSHIPS—(Continued)

Charleston County

Pay Tuition—

Bee, S S., Charleston.
 Cappellmann, G. J. S., Charleston
 Fergerson, J. L., Charleston.
 Fergerson, T. D., Charleston.
 Fishburn, F. J., Charleston.
 LaRoche, J. D., Edisto Island.
 Messery, L. C., Meggetts.
 Morrer, T. B., Charleston.
 Morrison, J. B., McClellanville
 Prause, A. B., Charleston.
 Rittenburg, M. B., St. Stevens.
 Stello, L. T., Charleston.
 Stevens, J. T., Youngs Island.
 Stringfellow, W. K., Charleston.
 Wellings, C. E., Charleston,
 Weisers, H. C., Charleston.

Free Tuition—

Bair, J. T., Charleston.
 Bunch, R. L. Charleston.
 Darby, C. P., Mt. Pleasant.
 Dotterer, E. G., Charleston.
 Kirkley, C. L., McClellanville
 Mayzeck, J. F., Charleston.
 Parker, W. E., Charleston.
 Reid, D. A., Charleston.
 Silcox, D. H., Mt. Pleasant.
 Townsend, T. S., Martins Point.

Scholarship—

Metz, G. E., Charleston.

Cherokee County

Pay Tuition—

Brown, T.L., Gaffney.
 Fortenberry, R. O. Gaffney.
 Hall, J. H., Gaffney.
 Hall, R. E. Gaffney.
 Hambright, W. A., Kings Creek.
 Jeffries, T. L., Pacolet.
 McArthur, W. J., Gaffney..
 McCraw, F. Z., Gaffney.
 Poole, P. O., Gaffney.
 Smith, R. E., Gaffney.
 Sparks, R. H., Gaffney.
 Woodside, H. R., Gaffney.

Free Tuition—

Brown, J. J. Gaffney.
 Gaffney, H. E., Gaffney.
 Hoyle, Claude. Blacksburg.
 McCraw, L. G., Gaffney.
 Quinn, J. P., Gaffney.

Scholarship—

Mullins, H. D., Gaffney.
 Sarratt, Walter. Gaffney.
 Starnes, W. A., Blacksburg
 Tollison, L. C., Gaffney.

Chester County

Pay Tuition—

Bell, S. L., Chester.
 Clinton, T. F., Edgemore.
 Hall, E. H. Jr., Great Falls.
 Harden, J. C., Chester.
 Jordon, R. C., Richburg.
 Reid, J. R., Richburg.
 Reid, W. J. Richburg.
 Tibbs, R. H., Great Falls.
 Wade, W. M., Chester.
 White, J. A., Chester.
 Wooten, R. B., Lewis Turnout.

Free Tuition—

Bankhead, W. W., Lowryville.
 Bramlett, J. W., Leads.
 Darby, J. E., Chester.
 Funderburk, O. F., Great Falls.
 Gaston, J. P., Rodman.
 Grant, W. H., Chester.
 Hardee, H. M., Lowryville.
 Hardee, J. H., Lowryville.
 McKeown, S. M., Chester.
 Massebeau, W. A., Chester.
 Melton, L. H., Chester.
 Millan, H. J., Richburg,
 Murr, B. L., Chester
 Reid, T. B., Chester.
 Sanders, J. H., Chester.
 Sanders, J. R., Chester.
 Shannon, J. R., Chester.
 Simpson, M. B., Chester.
 Simpson, W. N., Chester.
 Sterling, J. S., Cornwell.

Scholarship—

Stevenson, T. C., Richburg.
 White, W. A., Chester.

Chesterfield County

Pay Tuition—

Knight, T. M., Cheraw.

Free Tuition—

Blakney, L. R., Pageland.
 Brice, G. S., Patrick.
 Jowers, H. C., Angelus.
 Knight, H. D., Jefferson.
 Knight, J. D., Jefferson.
 Baker, W. L., Jefferson.
 Powell, G. H., Cheraw.
 Spencer, E. P., McFarling, N. C.
 Thrower, J. H., Cheraw.

Clarendon County

Pay Tuition—

McIntosh, C. H., New Zion.

Scholarship—

Heriot, L. W., Manning.
 Plowden, E. D., Jordon.
 Timmons, J. H., Manning.
 Wilson, C. J., Manning.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND SCHOLARSHIPS—(Continued)

Colleton County**Pay Tuition—**

Boyton, C. W., White Hall.
McTeer, J. R., Walterboro.

Free Tuition—

Bennett, W. M., Ashton.
Breland, A. D., Collageville.
Corbett, T. B., Walterboro.
Jones, J. D., Ashton.
Kinard, J. A., Ruffin.
Thomas, J. H., Ruffin.

Scholarship—

Padgett, A. B., Smoaks.
Padgett, J. M., Jacksonboro.
Sanders, K. B., Walterboro.
Smith, R. H., Smoaks.
Smyly, M. M., Ruffin.

Darlington County**Pay Tuition—**

Anderson, E. C., Timmons ville.
Gillispie, S. L., Hartsville.
Hicks, M. H., Hartsville.
Jeffords, A. U., Darlington.
Stokes, K. E., Darlington.

Free Tuition—

Boseman, T. R., Darlington.
Bryant, W. D., Dovesville.
Dove, W. S., Dovesville.
Foster, R. M., Hartsville.
Jeffords, C. H., Darlington.
Lewis, J. M., Darlington.
Lewis, W. M., Darlington.
Rhodes, C. F., Darlington.
Stogner, J. R., Hartsville.
Stuckey, C. C., MeBee.

Scholarship—

Flowers, H. B., Darlington.
Howle, J. P., Darlington.
Jordon, E. H., Timmons ville.
Law, J. M., Darlington.
Ross, J. E., Darlington.

Dillion County**Pay Tuition—**

Hargrove, F. W., Dillion.
Hayes, T. W., Latta.
McCormack, E. A., Dillion.
McCormack, E. L., Dillion.
McCormack, J. H., Dillion.
Williamson, J. W., Homer.

Free Tuition—

Alford, E. R., Latta.
Finch, W. M., Kemper.

Hamilton, S. S., Dillion.

Johnson, I. L., Latta.

Stephens, S. F., Dillion.

Scholarship—

Allen, A. C., Dillion.
McLeod, N. A., Bingham.
McLeod, T. E., Bingham.

Dorchester County**Pay Tuition—**

Hutchuson, Joseph, Summerville.
Van De Erve, J. M., Summerville.

Free Tuition—

Rickborn, J. H., Reevesville.
Robbins, L. L., St. George.

Scholarship—

Kirby, K. M., St. George.
Kizer, H. F., St. George.

Edgefield County**Pay Tuition—**

Day, C. B., Trenton.
Jamison, T. R., Trenton.
Watson, S. J., Johnson.

Free Tuition—

Salters, F. S., Trenton.
Talbert, E. H., Edgefield.

Scholarship—

Adams, L. C., Meriwether.
Pardue, W. A., Trenton.
Reams, B. L. Jr., Johnston.

Fairfield County**Pay Tuition—**

Blair, J. W., Blair.
Cathcart, A. B., Winnsboro.
Wright, J. B., Shelton.

Free Tuition—

Bomar, J. T., Winnsboro.
Burley, F. A., Monticello.
Burley, W. J., Monticello.
Glenn, H. Y., Wallaceville.
Jennings, F. C., Winnsboro.
Robinson, O. A., Winnsboro.
Tennant, A. B., Winnsboro.

Scholarship—

Elliott, W. R., Winnsboro.
Yarborough, H. W., Wallaceville.

Florence County**Pay Tuition—**

Anderson, O. S., Timmons ville.
Askins, H. W., Timmons ville.
Bryce, G. W., Florence.
Evans, M. A., Pamplico.
Huggins, J. A., Timmons ville.
Smith, E. D., Florence.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND SCHOLARSHIPS—(Continued)

Free Tuition—

Carter, T. H., Timmons ville.
 Finklea, G. I., Hyman.
 Hawkins, G. E., Timmons ville.
 Hinson, L. O., Scranton.
 Langston, A. M., Timmons ville.
 McDaniel, W. C., Timmons ville.
 Matthews, S. C., Scranton.
 Moore, P. W., Florence.
 Myers, W. M., Scranton.
 Stewart, J. D., Florence.
 Whitton, J. E., Florence.

Scholarship—

Jackson, T. G., Florence.
 McLaughlin, R. D. Jr., Effingham.
 Ross, D. H., Florence.
 Shands, R. G., Ebenezer.
 Shands, W. A., Ebenezer.

Greenwood County

Pay Tuition—

Bailey, M. A., Greenwood.
 Bowles, H. J., Greenwood.
 Emmerson, R. W., Hodges.
 Hunter, C., Greenwood.
 Jackson, M. E., Greenwood.
 Rhodes, S. B., Gaines.
 Rodgers, H. W., Callison.
 Rodgers, S. A., Callison.
 Seago, J. A., Greenwood.
 Tinsley, H. K., Hodges.
 Warner, M. R., Greenwood.
 Williams, B. L., Gaines.

Free Tuition—

Cochran, G. B., Donalds.
 Graig, W. L., Greenwood.
 Hartzog, H. G., Greenwood.
 Kinard, H. H., Greenwood.
 Milling, J. A., Greenwood.

Scholarship—

Dorn, T. E., Greenwood.
 Martin, L. K., Ninety Six.
 Rasor, H. L., Donalds.
 Shirley, L. R., Greenwood.
 Williamson, J. H., Ninety Six.

Greenville County

Pay Tuition—

Allen, C. S., Greenville.
 Bates, P. G., Marietta.
 Batson, J. P., Greenville.
 Carpenter, E. W., Greenville.
 Cason, F. E., Woodville.

Croskeys, H. G., Piedmont.
 Curdts, E. C. Jr., Greenville.
 Dill, R. C., Greenville.
 Dillard, W. P., Greer.
 DuVernt, W. R., Greenville.
 Fayssoux, F. S., Greenville.
 Jacobi, L. R., Greenville.
 Kitchen, T. W., Greenville.
 Leach, M. R., Greenville.
 Lineberger, C. H., Greenville.
 Morgan, B. A., Greenville.
 Pope, T. H., Greenville.
 Rosemond, J. E., Greenville.
 Rose, A., Greenville.
 Shull, W. G., Greenville.
 Verdin, L. M., Greenville.
 White, A. H., Simpsonville.
 Williams, W. B., Greenville.
 Wright, G. F., Greenville.

Free Tuition—

Alexander, J. S., Greenville.
 Allison, L. D., Greenville.
 Austin, P. B., Greenville.
 Bauman, R. C., Greenville.
 Chapman, A. H., Greenville.
 Cox, W. A., Greenville.
 Cureton, R. H., Greenville.
 Freeman, M. F., Greenville.
 Gaines, O. A., Greer.
 Green, G. H., Greer.
 Green, J. W., Greenville.
 Henderson, H. J., Greer.
 Holohan, R. F., Greenville.
 Jones, W. L., Greer.
 Moon, P. E., Piedmont.
 Simmons, G. G., Greenville.
 Smith, J. R., Greenville.

Scholarship—

Burgess, J. A., Greer.
 Grain, M. C., Taylors.
 James, J. H., Greer.
 McCrary, A. L., Greenville.
 Shanklin, J. A., Greer.

Georgetown County

Pay Tuition—

Donaldson, J. H., Georgetown.
 LaBruce, A. F., Georgetown.
 Ward, H. P., Georgetown.
 Westberry, J. E., Georgetown.

Scholarship—

Doar, L. H., Georgetown.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND SCHOLARSHIPS—(Continued)**Horry County****Pay Tuition—**

Harrelson, O. M., Loris.

Free Tuition—

Causey, O. R., Tabor, N. C.

King, C. B., Myrtle Beach.

Lewis, J. G. 1st., Aynor.

Page, W. Aynor.

Session, J. C., Conway.

Scholarship—

Causey, L. G., Tabor, N. C. R. F.D.

Clark, L. Conway.

Long, C. A., Conway.

Williamson, J. G., Tabor, N. C.

Hampton County**Pay Tuition—**

Garnett, J. K., Garnett.

Maner, J. K., Garnett.

Free Tuition—

Kearse, F. G., Crocketsville.

Mason, W. A., Estill.

Thomas, Archie. Hampton.

Wiggins, J. E., Garnet.

Scholarship—

Mason, R. S., Estill.

Miley, Percy., Brunson.

Jasper County**Scholarship—**

Parnell, C. L., Gillisonville.

Wilson, F. E., Ridgeland.

Kershaw County**Pay Tuition—**

DeLoach, E. C., Camden.

DeLaoch, L. D., Camden.

Jones, W. E., Bethune.

Jones, E. L., Liberty Hill.

Free Tuition—

Clark, T. H., Camden.

Goodale, T. E., Camden.

Hinson, E. M., Blaney.

Kirkland, C. R., Camden.

Kirkland, R. R., Camden.

Lipscombe, V. J., Camden.

Scholarship—

Outen, D. L., Lancaster.

Smith, A. J. Jr., Bethune.

Lancaster County**Pay Tuition—**

Croxtan, E. M., Lancaster.

Dobson, C. R., Lancaster.

Stewman, W. S., Lancaster.

Free Tuition—

Baker, W. E., Kershaw.

Blakney, L. B., Lancaster.

Croxtan, R. D. Kershaw.

Elmes, H. S., Fort Mill.

Lingley, A. F., Lancaster

Neal, A. J., Heath Springs

Reed, P. B., Lancaster

Scholarship—

Cook, W. C., Kershaw

Laurens County**Pay Tuition—**

Bailey, T. L. W., Clinton

Bolt, G. W., Laurens

Boyce, M. O., Cross Hill

Buford, J. A., Clinton

Carter, D. E., Clinton

Copeland, E. W., Laurens

Davis, T. W., Clinton

Dial, W. A., Cross Hill

Easterby, A. H., Laurens

Nance, R. D., Cross Hill

Pinson, M. C., Cross Hill

Taylor, W. H., Laurens

Wallace, R. W., Gray Court

Free Tuition—

Allbright, W. V., Laurens

Cannon, A. M. Mountville

Counts, R. H., Laurens

Flemmings, J. M. Lanford Station

Freeman, J. C., Princeton

Garrett, C. C., Laurens

Griffin, W. F., Cross Hill

Grumbles, W. F., Owings

Richey, B. R., Ware Shoals

Rapp, J. W., Cross Hill

Wood, A. K., Laurens

Scholarship—

Boyd, J. A., Laurens

Hamilton, T. D., Laurens

Holmes, J. S., Laurens

Holmes, R. A., Laurens

Steer, R. D., Clinton

Wofford, G. C., Laurens

Lee County**Free Tuition—**

Cunningham, W. R., Bishopville

Scholarship—

Hinson, H. S., Lynchburg

Lemon, J. M., Lynchburg

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND SCHOLARSHIPS—(Continued)

Lexington County

Pay Tuition—

Barr, C. M., Leesville
 Bouknight, L. S., Batesburg
 Caughman, E. M., Lexington
 Etheridge, T. J. Jr., Batesburg
 Franklow, M. L., Leesville
 Witt, T. H., Swansea

Free Tuition—

Dellenger, E. L., Cayer.
 Dowling, C. B., Swansea
 Edwards, P. W., Batesburg
 Hiller, R. E., Chapin
 Kinard, F. W., Leesville
 King, B. D., Swansea
 Watson, A. H., Lexington
 Watson, T. C., Batesburg

Scholarship—

Culler, F. N., Swansea
 Culler, J. G., Swansea
 Hendricks, S. H., Lexington
 Watson, J. R., Batesburg

Marion County

Pay Tuition—

Goodyear, C. P., Nichols
 McMillan, F. W., Mullins.
 McMillan, R. W., Centenary.
 Mace, A. P., Mullins
 Reaves, J. C., Mullins
 Rogers, C. H., Mullins.
 Rogers, V. M., Mullins

Free Tuition—

Barham, J. R., Marion
 Bryant, F. M., Marion
 Cartwright, A. K., Marion
 Craven, W. H., Gresham
 Mace, K. M., Mullins
 Montgomery, S. M., Marion
 Owens, J. B., Marion

Scholarship—

Davis, O. W., Centenary
 Evans, F. A., Marion
 Jones, G. L., Mullins

Marlboro County

Pay Tuition—

Avent, J. K., Bennettsville
 Bethea, T. J., McColl
 Breeden, E. L., Bennettsville
 Crossland, W. D., Bennettsville
 Fletcher, E. G., McColl
 Hodges, H. M., McColl
 Mangum, W. S., McColl
 Napier, C. D., Blenheim

Reynolds, C. M., Bennettsville
 Smith, A. L., Bennettsville
 Smoot, J. T., McColl
 Townsend, B. O., Bennettsville
 Welch, W. F., Clio

Free Tuition—

Carry, J. S., Bennettsville
 Easterling, K. S., Bennettsville
 Liles, S. E., McColl
 Miller, L. R., Bennettsville
 Miller, P. H., Tatum
 Wilkens, W. M., Clio
 Wright, L. C., Clio

Scholarship—

Anderson R. D., Whitoker, N. C.
 Barrington, W. L., Gibson, N. C.
 Newton, R., Gibson, N. C.
 Smith, M. M., Clio

McCormick County

Pay Tuition—

Covin, W. F., Willingston
 Talbert, J. B., McCormick

Free Tuition—

Sheppard, J. L., McCormick

Scholarship—

Talbert, J. H., McCormick

Newberry County

Pay Tuition—

Coleman, H. V., Silverstreet
 Huffman, W. C., Little Mountain
 Long, L. S., Prosperity
 Mayer, M. O., Pomaria
 Sanders, V. C., Newberry
 Smith, C. T., Newberry
 Smith, W. B., Kinards

Free Tuition—

Aull, J. L., Pomaria
 Coleman, J. M., Silverstreet
 Pugh, R. W., Prosperity
 Sease, E. C., Prosperity
 Sease, R. E., Prosperity
 Shealey, N. P., Newberry
 Singley, H. S., Newberry
 Spearman, W. W., Newberry
 Watkins, A. W., Chappells
 Wise, G. C., Prosperity

Scholarship—

Aull, J. C., Pomaria
 Goree, I. M., Newberry
 Kibbler, J. W., Pomaria
 Smith, D. E., Kinards

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND SCHOLARSHIPS—(Continued)

Napier, C. D., Blenheim
Oconee County

Pay Tuition—

Brown, C. A., West Union
Brown, H. A., Oakway
Bryan, W. W., Clemson College
Carey, F. L., Seneca
Cross, J. B., Westminister
Garrison, C. R., Seneca
Gignilliat, G. W., Seneca
Heller, J. R., Seneca
Hines, E. A., Seneca
Holmes, A. G., Jr., Clemson College
Hunt, F. M., Walhalla
Johns, J. H., Westminister
Martin, B. V., Clemson College
Martin, R. S., Clemson College
Newman, C. C., Clemson College
Norton, J. J., Seneca
Seaborn, L. A., Walhalla
Sisk, G. N., Clemson College
Stribbling, D. W., Richland
Srother, F. V., Walhalla
Teal O. A., Westminister
Thomson, D. P., Seneca

Free Tuition—

Alexander, J. H., Walhalla
Anderson, W. T., Seneca
Barrs, T. A., Clemson College
Bowie, C. H., Seneca
Cromer, L. E., Seneca
Duggan, O. R., Seneca
Gillispie, B. B., Seneca
McCorley, C. R., Seneca
Martin, L. I., Westminister
Moon, C. T., Seneca
Spencer, B., Madison
Stribling, R. S., Seneca
Stribling, T. S., Seneca
Thompson, J. M., Westminister
Todd, J. N., Walhalla
Verner, J. V., Richland

Scholarship—

Harvey, G. C., Westminister
McPhail, M., Townville
Morris, J. A., Newry
Shiver, J. C., Clemson College
White, H. L., Westminister
Wilbanks, B. H., Clemson College

Orangeburg County

Pay Tuition—

Anderson, J. S., St. Matthews
Buie, J. A. E., Branchville
Gilmore, H. S., Holly Hill

Hayden, E. C., Cope
Herbert, D. O., Orangeburg
Jeffries, W., Holly Hill
Knotts, F. L. Jr., North
Knotts, W. T., North
Lee, S. A., Orangeburg
Porter, L. A., Springfield
Sheppard, B., Orangeburg
Smith, A. Z., Bowman
Smith, T. E., Rowesville
Thackston, A. J., Orangeburg
Thomas, J. R., Cope
Tyler, R. T., Orangeburg
Vallentine, J. G., Cope
Whetsell, J. A., Parler
Whetsell, M. H., Bowman
Whetstone, G. B., North
Wilson, G. V., Bowman
Wilson, H. F., Bowman

Free Tuition—

Ayers, D. C., Orangeburg
Bauldin, H. L., Orangeburg
Byrd, H. L., North
Crum, O. L., Orangeburg
Fulmer, C. E., Cope
Gramlin, L. E., Orangeburg
Hayden, D. C., Orangeburg
Haden, Leo, Orangeburg
Hayden, T. J., Rowesville
Howell, F. E., Orangeburg
Mosley, J. W., Orangeburg
O'Cain, H. F., Orangeburg
Pauling, J. R., St. Matthews
Pearson, T. P., Orangeburg
Sheriffs, J. M., Orangeburg
Stoudamire, H. L., Holly Hill
Traxler, W. C., Branchville
Zeigler, H. J., Orangeburg

Scholarship—

Baker, J. H., Orangeburg
Hart, T. J., Vance
Syckes, L. C., Orangeburg
Traxler, H. C., Bowman

Pickens County

Pay Tuition—

Brock, J. L., General
Callaham, F. D., Liberty
Carter, E. F., Liberty
Chambers, J. A., Clemson College
Ellison, L. A., Easley
Finley, H. L., Easley
Hendricks, L. A., Easley
Hester, J. B., Easley
Jones, B. K., Easley

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND SCHOLARSHIPS—(Continued)

| | | | |
|--------------------|-----------------|-------------------|-------------|
| Klugh, W. W. Jr | Clemson College | Dominick, H. B., | Columbia |
| Lenhart, B. F., | Easley | Harmon S. E., | Columbia |
| Linton, W. T., | Clemson College | Henderson, E. M., | Columbia |
| Long, J. T., | Central | Killian, J. M., | Columbia |
| McHugh, R. S., | Clemson College | Lanford, C. H., | Blythe Wood |
| O'Dell, Ross | Liberty | Leitzsey, F. B., | Columbia |
| Rowland, J. R., | Central | Maxwell, R. E., | Columbia |
| Smith, R. H., | 2nd Pickens | Phipps, F. V., | Columbia |
| Smith, T. W., | Pickens | Shelamers, H. D., | Columbia |
| Sutherland, E. C., | Pickens | Shoolbred, A., | Columbia |
| Sutherland, J. L., | Pickens | Vise, E. E., | Columbia |
| Tarrant, W. E., | Central | | |
| Vandiver, E. H., | Calhoun | | |
| Walker, H. P., | Easley | | |
| Werner, W. J., | Central | | |
| Wertz, J. B., | Clemson College | | |
| Wyatt, B. W., | Easley | | |

Free Tuition—

Allgood, L. L., Central
 Chapman, Hoyt Calhoun
 Cobb, C. N., Easley
 Ellison, M. C., Easley
 Hewer, J. C., Clemson College
 Jones, O. F., Clemson College
 Matthews, D. T., Pickens
 Plowden, E. D., Central
 Phillips, C. Y., Norris
 Roark, D., Pickens
 Roark, R. B., Pickens
 Russell, H. E., Easley
 Sword, P. E., Central
 Thomas, D. L., Pickens

Richland County

Pay Tuition—

Asbill, C. M., Columbia
 Cobb, W. H., Columbia
 Darby, J. P., Columbia
 DuPree, G. C., Columbia
 Ellis, E. W., Columbia
 Hamrick, S. W., Columbia
 Hinnant, J. L., Blythe Wood
 Roy, W. L., Columbia
 Sams, J. H., Columbia
 Stork, William, Columbia

Free Tuition—

Bower, J. W., Columbia
 Bradley, T. L., Columbia
 Brown, B. S., Blythe Wood
 Brockman, E. W., Columbia
 Cannon, E. A., Columbia
 Caughman, J. B., Columbia
 Causley, J. E., Columbia
 Crowson, J. K., Columbia

Scholarship—

Coleman, H. C., Hopkins
 Koone, H. E., Peak
 Lomas, C. H., Columbia
 McCracken, H. E., Columbia

Saluda County

Pay Tuition—

Coleman, O. W., Silver Street
 Davis, F. L., Ward

Free Tuition—

Bonnett, G. W., Ridge Springs
 Goff, W. E., Saluda
 Herlong, J. R., Ward

Scholarship—

Bonnett, A. L. Ridge Springs
 Goff, H. B., Saluda
 Grice, H. S., Ward
 Smith, J. A., Saluda

Sumter County

Pay Tuition—

Brown, W. A., Sumter
 Brunner, H. P., Sumter
 Chandler, J. N., Sumter
 Friar, E. N., Sumter
 Green, C. H., Sumter
 Harvin, O. D., Pinewood
 King, J. A., Sumter
 Lenoir, T. W., Rembert
 Parler, M. L., Wedgefield
 Rivers, T. D., Oswego
 Sanders, D. M., Sumter
 Sanders, M. H., Hagood
 Sanders, M. K., Hagood
 Tozier, L. R., Sumter
 Warren, J. A., Sumter

Free Tuition—

Bass, F. J., Mayesville
 Bradley, N. M., Sumter
 Brice, R. W., Wedgefield
 Brunson, F. A., Sumter
 Buck, F. E., Sumter

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND SCHOLARSHIPS—(Continued)

Cunningham, D. W., Sumter
 Davis, J. A., Sumter
 Dixon, R. C., Sumter
 Felder, J. C., Sumter
 Haynesworth, J. R., Sumter
 McGrew, C. J., Sumter
 Marshall, G. N., Sumter
 Nettles, E. W., Wedgefield
 Whilden, C. N., Sumter

Scholarship—

Kennedy, E. C., Sumter
 Moore, S. F., Dalzell
 Parker, W. A., Dalzell
 Thomas, H. L., Mayesville
 Haynesworth, C. R., Sumter
 Wells, S. F., Sumter

Spartanburg County

Pay Tuition—

Ballenger, R. C., Welford
 Beason, G. H., Woodruff
 Berry, W. J., Welford
 Carson, J. W., Spartanburg
 Coan, J. A., Spartanburg
 Cox, G. W., Greer
 Darden, J. B., Spartanburg
 Dunbar, L. D., Spartanburg
 Fitzgerald, A. B., Spartanburg
 Gray, G. S., Woodruff
 Hagood, J. F., Spartanburg
 Hendricks, T. J., Duncan
 Lambright, T. L., Landrum
 Lee, R. L. Jr., Landrum
 McClimmon, M. L., Greer
 Phifer, M. A., Spartanburg
 Shore, F. W., Greer
 Skinner, T. B., Spartanburg
 Taylor, T. J., Spartanburg
 Thomas, B. K., Landrum
 Thorne, T. F., Landrum
 Turbyfield, W. G., Spartanburg
 Turpin, B. W., Gramling
 Waldrop, J. D., Campbello
 Watkins, E. F., Spartanburg

Free Tuition—

Bagwell, F., Converse
 Bobo, N., Woodruff
 Bonner, T. A., Trough
 Booker, H. L., Welford
 Burnett, W. E., Welford
 Cannon, A. E., Clifton
 Fuller, R. C., Paolet
 Trimmier, L. G., Spartanburg
 Vaughan, T. L., Cowpens
 West, Walter, Spartanburg

Scholarship—

Cash, D. H., Chesnee
 Ezell, B. H., Spartanburg
 Martin, W. T., Chesnee
 Phifer, G. E., Spartanburg
 Steadman, C. L., Spartanourb
 Thomason, W. E., Woodruff
 Trent, R. L., Spartanburg

Union County

Pay Tuition—

Bradley, D. W., Union
 Calvert, J. P., Jonesville
 Cudd, J. E., Jonesville
 Gibson, D. A., Union
 Haas, W. V., Union
 Jordon, A. F., Union
 Jeter, C. A., Carlisle
 Sams, R. O., Jonesville
 Scott, J. T., Jonesville

Free Tuition—

Burton, C. C., Union
 Hallman, A. L., Lockhart
 Hollingsworth, P. H., Union
 Humphries, H. B., Union
 Jeffries, E. E., Union
 Kirby, C. E., Union
 Redick, T. S., Union
 Sartor, C. C., Union
 Smith, W. R., Union
 Truluck, R. N., Union

Scholarship—

Clark, D. C., Union
 Henery, W. T., Sedalia, S. C.

Williamsburg County

Pay Tuition—

Brunner, W. C., Lanes
 Daniel, W. C., Cooper
 McCullough, S. H., Kingstree
 McClutchen, J. C., Kingstree
 McFadden, J. L., Cades
 O'Bryan, E. C., Hennerman
 Oliver, M. B., Greelyville
 Rhem, C. F., Rhems

Free Tuition—

Blackwell, T. J., Salters
 Kirton, M. B., Cades

Scholarship—

Daniel, D. M., Salters

York County

Pay Tuition—

Bailes, J. M., Fort Mill
 Bailes, W. B., Fort Mill,

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND SCHOLARSHIPS—(Continued)

Brown, L. P., Fort Mill
 Faires, C. D., Rock Hill
 Love, J. D., McConnelsville
 Stead, W. A., Rock Hill
 Sturgis, H. V., Rock Hill
 Williams, W. L. Rock Hill

Miller, O. L., Rock Hill
 Plexico, J. T., York
 Ragin, J. J., Rock Hill
 Robison, S C., York

Free Tuition—

Free Tuition—

Chappell, I. W., Rock Hill
 Dorsett, R. R., York
 Faris, T. M. Fort Mill
 Fewell, J. A., Rock Hill
 Garrison, C. C., Fort Mill
 Gibson, J. T., Fort Mill
 Gordon, W C., Rock Hill
 Hope, R. H., Rock Hill
 Kirk, E. S., Rock Hill
 Long, E. M., Rock Hill
 Miller, J. C., York

Sharp, J. M., Jr. Leslie
 Sharp, G. W., Leslie
 Stephenson, J. A., York
 Wray, J. Q., York
 Young, L. R., Rock Hill
 Youngblood, J. M., Rock Hill
 Scholarship— ;
 Alexander, E. R. Fort Mill
 Burns, J. F., York
 Cook, J. M., Fort Mill
 Latham, C. G., York
 Smith, Claude York

Non-Resident Students

Non Residents

Adams, J. W., Jemison, Ala
 Anderson, C. W., Greensboro,
 N. C.
 Anderson, E. K., Auburndale,
 Fla.
 Blont, T. C., Charlotte, N. C.
 Booker, L. R., Charlotte, N. C.
 Bush, F. W., Augusta, Ga
 Colbert, F. H., Ardmore Okla.
 Coleman, P. W., Anniston, Ala.
 Creighton, J. T., Atlanta, Ga.
 Cullum, F. E., Atlanta, Ga.
 Currence, R. C., Gastonia, N. C.
 Davis, C. L., Hebarbdsville, Ga.
 Diaz, O., Boston, Mass.
 Dicks, R. L., Lakeland, Fla.
 Ellzey, M. A., Clio, Ga.
 Ergle, D. R., Augusta, Ga.
 Finch, M. C., Rocky Mount, N. C.
 Fowler, Bruce, Stanford, Texas
 Freeland, B. W., Crawley, La.
 Graham, F. A., Smithfield, Pa.
 Griffis, H. J., Ala.
 Harris, A. A. Blue Mountain, Ala.
 Hendee, M. H., Augusta, Ga.
 Horn M. D., Tallassee, Ala.
 Horn, R. A., Tallassee, Ala.
 Huffington, J. M., Eden, Md.
 Johnson, C. S., Terre Haute, Ind.
 James, S. H., Waycross, Ga.
 Jeffcoat, W. A., Bluefield, W. Va.

Kehew, C. L., South Harpsville,
 Me.
 Kent, Geo. P., Bloomfield, N. J.
 Kinard, J. V., Atlanta, Ga.
 King, J. E., Rocky Mount, N. C.
 LaBarron, F. R., St. Petersburg,
 Fla.
 Livingston, D. F., Orlando, Fla.
 Longley, J. M., La Grange, Ga.
 Maxwell, W. C., Rydor, Ga.
 McMillan, G. W., Teachey, N. C.
 Mitchum, L. C., Savannah, Ga.
 Moon, Jas. T. Henritta, N. C.
 Parks, W. C., Augusta, Ga.
 Parker, E. G. Shelby, N. C.
 Roberts, O. A., Walters, Okla.
 Salley, E. M., Saluda, N. C.
 Sanftleben, D. A., Jamaica
 Smith, F. V., Charlotte, N. C.
 Smyth, J. A., Hendersonville,
 N. C.
 Sydenstricker, K. C., Portsmouth,
 Va.
 Thornton, G., Tuskegee, Ala.
 Tsukeyama, Yutoka Japan
 Verdery, C. B., Augusta, Ga.
 Weatherson, J. C., Buffalo, N. Y.
 Wilson, J. N., Villa Rica, Ga.
 Wilson, J. W., Villa Rica, Ga.
 Wilson, W. W., Russellville, Ark.
 Wood, T. C., Washington, D. C.
 Wooten, W. H., Lavonia, Ga.
 Zagora, O. F., Charlotte, N. C.

REPORT OF S. W. EVANS, SECRETARY-TREASURER OF THE CLEMSON AGRICULTURAL COLLEGE

Clemson College, S. C., July 1, 1924.

TO THE FINANCE COMMITTEE OF THE BOARD OF TRUSTEES,
(Through Prof. S. B. Earle, Acting President.)

Gentlemen:

I have the honor of transmitting herewith my Annual Report of the financial affairs of the Clemson Agricultural College of South Carolina for the fiscal year ending June 30, 1924.

Respectfully submitted,
S. W. EVANS, Secretary-Treasurer.

R.

RESOURCES

Income—

| | | |
|--|--------------|--------------|
| Balance on hand July 1, 1923 | | \$148,911.33 |
| Privilege Fertilizer Tax | \$220,329.60 | |
| Morrill and Nelson Fund | 25,000.00 | |
| Interest on Landscrip | 5,754.00 | |
| Interest on Clemson Bequest..... | 3,512.36 | |
| Tuition from Students | 16,505.70 | |
| Rents | 10,700.82 | |
| Matriculation and Laboratory Fees..... | 3,757.65 | |
| Interest and Misc. Receipts | 13,453.24 | \$299,013.37 |

From Other Sources—

Part Appropriations for College Instruction—

| | | |
|---------------------------------|--------------|--------------|
| July 1 to Dec. 31, '23 | \$ 44,681.46 | |
| January 1 to June 30, '24 | 61,022.39 | \$105,703.85 |
| Total | | \$553,628.55 |

EXPENDITURES

R.

| | | |
|---|--------------|--------------|
| Scholarships and Advertisements..... | \$ 16,661.45 | |
| Fertilizer Inspection and Analysis..... | 29,710.29 | \$ 46,371.74 |

College Operating Expenses:

| | | |
|------------------------------------|--------------|--------------|
| Salaries | \$169,009.91 | |
| Coal, Labor, Supplies, etc. | 102,713.83 | 271,723.74 |
| Equipment for teaching..... | 19,029.81 | |
| Permanent Additions and Improvm'ts | 92,423.71 | 111,453.52 |
| Total | | \$429,549.00 |

SUPPLEMENTARY REPORTS

| | |
|---|--------------|
| Reserve on hand June 30, 1924, necessary to carry College during season of small Fertilizer sales July 1st to January 1st | \$124,079.55 |
| Total | \$553,628.55 |

The following is a more detailed statement, showing the expenditures and cost of the Public Service Work, and each Department and Division of the College, under the items appropriated by the Board of Trustees:

PUBLIC STATE WORK DEPARTMENT

Scholarships and Advertisements—

| | | |
|---------------------------------------|--------------|--------------|
| Scholarships and Advertisements | \$ 16,661.45 | \$ 16,661.45 |
|---------------------------------------|--------------|--------------|

Fertilizer Inspection and Analysis—

| | | |
|--------------------------------------|----------|-----------|
| Salaries—Chemists | 8,550.00 | |
| Chemicals | 500.00 | |
| Apparatus | 400.00 | |
| Gasoline | 281.70 | |
| Record Books, Postage, etc. | 165.77 | |
| Incidentals | 43.32 | |
| Labor—Janitor | 300.00 | |
| Extra Help in Laboratory and Office | 826.67 | |
| Emergency Supplies, Labor, etc. | 591.19 | |
| Traveling Expenses | 90.05 | |
| Salaries Secretary and Clerk | 4,000.00 | |
| Labor—Janitor (Fert. Insp.) | 600.00 | |
| Inspection Tags and Printing | 5,269.94 | |
| Pay and Travel of Inspectors | 6,604.25 | |
| Freight, Postage, etc. | 678.71 | |
| Legal Services | 250.00 | |
| Fertilizer Bulletins | 443.90 | |
| Repairs and Replacements | 38.09 | |
| Office Furniture and Fixtures | 76.70 | 29,710.29 |

| | |
|--------------------------------------|--------------|
| Public State Work Expenditures | \$ 46,371.71 |
|--------------------------------------|--------------|

COLLEGE WORK
Academic Department

Economics and Sociology Division—

| | | |
|---------------------------------------|---------|------|
| Periodicals and Reference Books | \$ 5.00 | 5.00 |
|---------------------------------------|---------|------|

English Division—

| | | |
|-----------------------|-------|-------|
| Repairs | 1.40 | |
| Stationery, etc. | 11.90 | 13.30 |

History Division—

| | | |
|--------------------------------|------|------|
| Periodicals for Class Use..... | 7.00 | 7.00 |
|--------------------------------|------|------|

Office and Unclassified Division—

| | | |
|-----------------------------------|--------|--------|
| Janitor (Upper Floor) | 410.00 | |
| Office and Janitor Supplies | 144.76 | |
| Class Room Seats | 322.96 | 877.72 |

Physics Division—

| | | |
|---------------------------------------|--------|--------|
| Laboratory Supplies and Repairs | 137.51 | |
| Physics Apparatus | 340.93 | 478.44 |

Salaries—

| | | |
|---|-----------|-----------|
| Salaries—Professors and Assistants..... | 34,918.32 | 34,918.32 |
|---|-----------|-----------|

| | |
|-------------------------------|--------------|
| Department Expenditures | \$ 36,299.78 |
|-------------------------------|--------------|

AGRICULTURAL DEPARTMENT

Agricultural Education Division—

| | | |
|----------------------------------|-----------|-----------|
| Transportation of Students | \$ 298.54 | |
| Printing School Leaflets | 177.32 | |
| Lantern Slides and Photos | 18.52 | |
| Office Furniture | 86.53 | |
| Laboratory Equipment | 175.18 | \$ 756.09 |

Agronomy Division—

| | | |
|---|--------|----------|
| Labor | 202.00 | |
| Seed, Score Cards, etc | 49.95 | |
| Repairs and Parts for Machines | 29.85 | |
| Materials for class use | 201.00 | |
| Cement, Gasoline, Oil, etc. | 149.50 | |
| Misc. Small Lab'y Equipment | 494.86 | |
| Office Equipment, Files, etc. | 48.36 | |
| Equipment for Farm Mach. Lab'y | 994.19 | |
| Screening Windows, F. M. Building | 30.00 | 2,199.71 |

Animal Husbandry Division—

| | | |
|-----------------------------------|----------|--|
| Part salary—Herdsman | 500.00 | |
| Labor | 1,000.00 | |
| Repairs to Fences | 238.64 | |
| Expenses to Judging Contest | 29.22 | |
| Feed and Fertilizer | 2,971.62 | |
| Veterinary Service | 200.00 | |

| | | |
|---------------------------------------|----------|----------|
| Registration Books | 50.00 | |
| Farm Tools | 199.62 | |
| Misc. Small Tools and Equipment | 199.43 | |
| Piping water to Hog Lots | 280.01 | |
| New Fencing for Hog Lots | 601.52 | |
| Office and Classroom Furniture | 150.00 | |
| Pasture Improvements | 369.90 | |
| Vats for Hog Houses and Lots | 299.84 | |
| Beef Cattle Barn | 2,510.99 | 9,600.79 |

Botany and Bacteriology Division—

| | | |
|------------------------------------|--------|----------|
| Botanical Publications | 47.00 | |
| Glassware and Lab'y Supplies | 396.79 | |
| Collecting Materials | 282.35 | |
| Repairs and Replacements | 99.01 | |
| Microscopes | 423.30 | |
| Morphology Equipment | 99.41 | |
| Plant Physiology Equipment | 74.01 | |
| Soapstone Sink and Shelves | 32.18 | 1,454.05 |

Dairy Division—

| | | |
|---|----------|----------|
| Wages—Creamery Foreman | 825.00 | |
| Wages—Dairy Herdsman | 582.57 | |
| Dairy Herd Labor for Teaching | 483.99 | |
| Feed for Dairy Herd for Teaching | 701.27 | |
| Freight and Express | 59.33 | |
| Operating and Upkeep Expenses | 129.94 | |
| Upkeep of Fences | 197.90 | |
| Repairs to Creamery | 170.98 | |
| Expenses to Judging Contest | 100.00 | |
| Livestock Exhibit State Fair | 299.52 | |
| Supplies for Teaching | 205.50 | |
| Litter Carriers | 99.27 | |
| Barn Equipment and Supplies | 99.99 | |
| Creamery Equipment for Teaching | 355.93 | |
| Wizard Vat Pasteurizer | 297.00 | |
| Power Churn | 153.69 | |
| Hay Fork and Truck | 102.79 | |
| Improvement to Dairy Barn Grounds | 49.96 | |
| Half Cost Ford Truck | 300.00 | |
| Pasture Improvements | 200.00 | |
| Guernsey Cattle | 1,000.00 | |
| Roof to W. Silos | 508.87 | |
| Five Test Cow Stalls | 866.77 | |
| F's for 2 Stall Silos | 247.36 | |
| Enlargement Milk Room | 799.99 | 8,837.62 |

Entomology and Zoology Division—

| | | |
|-----------------------------------|-----------|--------|
| Class and Lab'y Materials | \$ 140.37 | |
| Labor | 149.50 | |
| Repairs to Instruments | 75.00 | |
| Spray and Dusting Machinery | 138.48 | |
| Laboratory Equipment | 198.35 | |
| Stools for Laboratory | 111.52 | 813.22 |

Farm Division—

| | | |
|---------------------------------|--------|--------|
| Ditching in Bottoms | 600.00 | |
| Repairs to Farm Buildings | 200.00 | 800.00 |

Geology and Mineralogy Division—

| | | |
|---------------------------------------|-------|--------|
| Laboratory Supplies and Repairs | 50.00 | |
| Labor | 49.60 | |
| Motor for Ceramic Laboratory | 53.68 | |
| Lantern Slides | 9.75 | |
| Stools | 39.81 | 202.84 |

Horticultural Division—

| | | |
|-------------------------------------|--------|----------|
| Part Salary Greenhouse Foreman ... | 660.00 | |
| Part Salary Hort. Foreman | 722.25 | |
| Labor | 836.86 | |
| Fertilizers, Seeds and Plants | 449.55 | |
| Oil, Gas, etc. | 99.97 | |
| Greenhouse Supplies and Repairs ... | 122.92 | |
| Coal for Greenhouse | 97.35 | |
| Spray Apparatus and Materials | 59.87 | |
| Feed for two mules | 260.00 | |
| Tools for Class Use | 49.79 | |
| Spray Apparatus | 39.85 | |
| Office Equipment | 50.00 | |
| Harness | 35.15 | |
| Two Horse Wagon | 123.48 | |
| One half Cost of Tractor, etc. | 266.25 | 3,873.29 |

Office and Unclassified Division—

| | | |
|---------------------------------------|----------|----------|
| Janitors and Janitor Supplies | 1,108.30 | |
| Gasoline | 188.96 | |
| Attendance on Conventions | 99.95 | |
| Stationery and Postage for Dept. | 499.79 | |
| Upkeep of Building | 195.40 | 2,092.40 |

Veterinary Science Division—

| | | |
|------------------------------------|--------|--------|
| Janitor and Extra Labor | 487.50 | |
| Coal | 29.22 | |
| Veterinary Journals | 4.00 | |
| Repairs to Fences and Stalls | 23.09 | |
| Laboratory Supplies | 44.89 | 588.70 |

Salaries—

| | | |
|------------------------------------|--------------|--------------|
| Salaries—Professors and Assistants | \$ 36,136.57 | \$ 36,136.57 |
| Department Expenditures | | \$ 67,355.28 |

CHEMICAL DEPARTMENT**Chemistry Division—**

| | | |
|------------------------------------|-----------|-------------|
| Chemical Apparatus | \$ 600.00 | |
| Chemicals and Supplies | 600.00 | |
| Gasoline | 295.59 | |
| Books, Journals and Bindings | 199.94 | |
| Repairs to Apparatus | 45.55 | |
| Incidentals | 142.18 | |
| Janitor and Office Helper | 660.00 | |
| Repairs to Plumbing | 689.05 | |
| Chemical Apparatus | 397.05 | |
| Student Lockers | 165.00 | |
| Additional Gas Machines | 800.00 | \$ 4,594.36 |

Salaries—

| | | |
|--------------------------------------|-------------|--------------|
| Salaries—Professors and Assistants.. | \$ 9,500.00 | \$ 9,500.00 |
| Department Expenditures | | \$ 14,094.36 |

ENGINEERING DEPARTMENT**Civil Engineering Division—**

| | | |
|--|-----------|-----------|
| Class Materials | \$ 100.00 | |
| Repairs and Replacements | 150.00 | |
| One Transit | 389.06 | |
| Equipment for Sand and Asphalt Testing | 150.00 | |
| Class Room Seats | 125.00 | \$ 914.06 |

Drawing Division—

| | |
|---|-------|
| Materials, Ink, Paper, etc. | 28.13 |
| Repairs and Renewal of Apparatus | 71.87 |
| Expenses of Architects... Contest | 25.00 |
| Subscriptions to Magazines | 51.50 |

| | | |
|-------------------------------------|--------|--------|
| Student Help in Blue Printing | 49.80 | |
| Drafting Tables | 247.85 | |
| Stools for Students | 85.00 | |
| Filing Cabinet for Drawings | 23.50 | |
| Architectural Reference Books | 74.91 | |
| Architectural Lantern Slides | 915 | |
| Plaster Casts | 25.00 | 691.71 |

Electrical Engineernig Division—

| | | |
|--|--------|----------|
| Laboratory Supplies | 109.99 | |
| Repairs and Renewals | 105.00 | |
| Class and Lab'y notes for Students | 29.72 | |
| Student Assistance | 147.30 | |
| Reference Books, etc. | 39.75 | |
| Freight on Machinery | 2.62 | |
| Galvanized Potent and Condenser ... | 292.00 | |
| Polyphrase Voltmeter | 154.20 | |
| Magnetic Tachymeter | 185.00 | |
| Three 5 K. W. Transformers | 225.00 | |
| Single Phase | 99.40 | |
| Power Factor Meter | 82.00 | |
| G. E. Condensor | 225.00 | |
| Instrument Transformers | 224.80 | 1,921.78 |

Forge and Foundry Division—

| | | |
|--------------------------------------|----------|----------|
| Latticing Supply Room | 77.68 | |
| Labor for Forge and Foundry | 1,650.00 | |
| Repairs and Replacements | 74.94 | |
| Forge Shop Supplies..... | 299.90 | |
| Coal for Forge Shop | 374.41 | |
| Foundry Supplies | 50.00 | |
| Pig Iron and Brass for Foundry | 150.00 | |
| Moulding Sand | 57.00 | |
| Coke for Foundry | 65.00 | |
| Gyrator Foundry Riddle | 150.00 | |
| Lumber for Flasks | 25.00 | 2,973.93 |

Machine Shop Division—

| | | |
|--------------------------------------|--------|----------|
| Labor—Machinist | 675.00 | |
| Repairs and Replacements | 214.23 | |
| Shop Materials | 351.98 | |
| Freight on Lathes | 16.27 | |
| Lathe, Chucks, Visers and Benches... | 432.06 | |
| Oxacetylene Equipment | 411.36 | 2,100.90 |

SUPPLEMENTARY REPORTS

Mechanical Engineering Division—

| | | | |
|-------------------------------------|----|--------|----------|
| Laboratory Supplies | \$ | 140.96 | |
| Repairs and Replacements | | 22.59 | |
| Coal Calormeters | | 350.00 | |
| Platform Scales | | 67.85 | |
| Water Weighing Tanks | | 60.00 | |
| Oil Flask Point Tester | | 14.50 | |
| Wieso & Gump | | 30.37 | |
| Cement floor, hydraulic Lab'y | | 442.23 | 1,128.50 |

Office and Unclassified Division—

| | | | |
|-----------------------------------|----|--------|-----------|
| Labor—Janitor | \$ | 600.00 | |
| Office and Janitor Supplies | | 209.29 | |
| Upkeep of Building | | 37.65 | |
| Attendance on Conventions | | 94.77 | |
| Incidentals | | 9.18 | |
| Blackboards for Classes | | 40.03 | \$ 990.92 |

Wood Shop Division—

| | | | |
|--|----|-----------|--------------|
| Labor—Machinist | \$ | 450.00 | |
| Supplies, as Lumber, etc. | | 474.12 | |
| Repairs and Replacements | | 309.26 | |
| Doors and Latches Lumber Shop | | 183.95 | |
| Double Ceil Finishing Room | | 84.96 | \$ 1,502.29 |
| Salaries—Professors and Assistants | \$ | 34,954.95 | \$ 34,954.95 |
| Department Expenditures | | | \$ 47,179.04 |

MILITARY DEPARTMENT**Office and Unclassified—**

| | | | |
|--|----|----------|-------------|
| Postage, Stationery, etc. | \$ | 429.25 | |
| Military Supplies | | 60.82 | |
| Upkeep of Band | | 123.04 | |
| Officers' Sabers | | 202.97 | |
| Cadet Officers' Insignias | | 325.00 | |
| New Band Instruments | | 113.04 | |
| Target Range | | 84.35 | |
| Class Room Equipment | | 5.00 | |
| Office Equipment | | 100.00 | \$ 1,443.47 |
| Salaries— | | | |
| Salaries—Commandant and Assistants | \$ | 5,719.65 | \$ 5,719.65 |
| Department Expenditures | | | \$ 7,163.12 |

TEXTILE DEPARTMENT.**Carding and Spinning Division—**

| | | | |
|------------------------------|----|--------|-------------|
| Cotton for Class Use | \$ | 500.00 | |
| Repairs and Supplies | | 182.83 | |
| Material for Class Use | | 96.46 | |
| Revolving Flat Card | | 450.00 | \$ 1,229.29 |

Dyeing Division—

| | | |
|-------------------------------------|--------|--------|
| Chemicals and Dye Stuffs | 168.67 | |
| Glassware and Lab'y Materials | 303.77 | |
| Mics. Small Lab'y Apparatus | 199.08 | 671.52 |

Office and Unclassified Division—

| | | |
|-------------------------------------|--------|----------|
| Janitor and Engineer | 999.20 | |
| Gasoline | 48.32 | |
| Stationery, Postage, etc. | 49.00 | |
| Student Labor | 93.98 | |
| Mill Boy Helper | 343.80 | |
| Textile Periodicals | 14.14 | |
| Freight on Donated Machinery | 198.61 | |
| Office Equipment | 69.50 | |
| Pulleys, Belts & Installation | 54.85 | 1,871.40 |

Weaving Division—

| | | |
|--|--------|----------|
| Warp and Filling Farm | 833.53 | |
| Loom Supplies and Repairs | 99.10 | |
| Knitting Yarn and Samples for Analysis | 4.23 | |
| Four Draper Looms | 743.88 | |
| Double Cylinder Dobby Looms | 300.00 | 1,980.74 |

Salaries—

| | | |
|--|-----------|-----------|
| Salaries—Professors and Assistants | 12,045.81 | 12,045.81 |
| Department Expenditures | | 17,798.76 |

PUBLIC UTILITIES DEPARTMENT**Campus Division—**

| | |
|------------------------------------|----------|
| Part Salary Campus Foreman | 660.00 |
| Labor for Campus | 1,793.24 |
| Fertilizers | 400.00 |
| Seeds Plants and Trees | 650.00 |
| Feed and Upkeep of Mules | 514.68 |
| Tools, Machinery and Repairs | 180.00 |
| Coping at Agril. Hall | 265.30 |
| Cement Walk | 971.79 |

| | | |
|--|----------|----------|
| Storm Water Drainage | 500.00 | |
| Development for Expt. Station Road | 298.37 | |
| Development Hotel, Bks. 1, 2, 3 | 1,599.68 | |
| Mower and Hand Mowers | 149.24 | |
| Two Horse Wagon & Harness | 200.00 | |
| Development Faculty Cemetery | 879.56 | |
| Trash Boxes | 146.28 | 9,208.14 |

Construction & Repairs Division—

| | |
|--|-----------|
| Office Supplies, Postage, etc | 71.42 |
| Repairs and Renewals of Apparatus | 22.58 |
| Tools and Implements | 49.61 |
| Gasoline and Tires for Truck | 100.00 |
| Misc. Unforeseen Repairs to Public Buildings | 1,133.63 |
| Stock of Lumber | 494.33 |
| Additional Cement Walks (Bk. No. 2) ... | 300.20 |
| New Gutters and Paint (Bk. 1) | 287.07 |
| Repairs and Painting guard room (No. 1) | 39.99 |
| Repairs to Public Buildings (Ex "A") .. | 5,372.65 |
| Repairs to Residences 1923-24 (Ex. "B") | 4,730.74 |
| Lumber Storage Shed | 396.92 |
| Partitioning Room No. 24 Ag. Bldg | 386.38 |
| Moving Partition in Room 23 Ag. Hall .. | 24.75 |
| Completion 2nd. Story in Museum | 192.92 |
| Trunk Room (Bk. No. 2) | 778.00 |
| Toilet Room (Eng. Bldg.) | 105.13 |
| Re-arrangement of 3rd Floor Eng. Bldg. .. | 275.19 |
| Completion of New Work (1st Floor Eng. Bldg.) | 366.11 |
| Door in Drawing Room (Eng. Bldg.) | 23.83 |
| Brick Addition (Elect. Lab.) | 748.99 |
| Four Ventilators (Farm Mach. Bldg.) .. | 126.10 |
| Areas & Steps at Lower Doors (Y. M. C. A.) | 24.15 |
| Store Room & Stairs (Cadet Hosp.) | 301.56 |
| Ventilators Front & Rear Doors (Cadet Hospital) | 110.23 |
| Toilet S-Wing Barracks No. 1 (1924) | 9,321.00 |
| Toilet N-Wing Barracks No. 1 (1923) ... | 8,232.87 |
| Chapel Extension, Ect. (1924) | 34,423.78 |

| | | |
|--|-----------|-------------|
| C & R Shop (1924) | 1,482.87 | |
| Additions to Barracks No. 1, etc | 22,534.46 | |
| Additional Door (Elmore) | 17.58 | |
| Back Steps & Platform (Pickett) | 39.92 | |
| Double Doors (Klugh) | 34.64 | |
| Additional Room (Bradley) | 594.54 | |
| Pr. Glass Doors (Daniel) | 29.88 | |
| Ceiling Servants House (Daniel) | 63.29 | |
| Deadening Floors (N. Hotel Annex) | 114.80 | |
| Changes & Additions (Calhoun) | 66.45 | |
| Salary Supt. (Hewer) | 1,800.00 | |
| Toilet Old Pres. House | 135.91 | |
| Gallery N. End of Chapel Ext. | 900.00 | \$96,254.47 |

Heat, Light and Water Division—

| | | |
|---------------------------------------|-----------|--------------|
| Labor—Engineers, Firemen, etc. | 6,911.80 | |
| Supplies | 1,893.21 | |
| Coal | 14,698.81 | |
| Repairs | 745.64 | |
| Fire Hose and Hose Fixtures | 365.00 | |
| Imp. Hospital and Heating System..... | 97.50 | \$ 24,711.96 |

Roads and Hauling Division—

| | | |
|--|----------|-------------|
| Labor, Truck Drivers, etc. | 2,099.80 | |
| Hire of Teams from Farm | 200.00 | |
| Gasoline, Oil, Tires, Repairs, etc. | 1,298.71 | |
| Top Soiling Roads | 499.56 | |
| Salary Superintendent | 1,500.00 | \$ 5,598.07 |

Telephone & Radio System—

| | | |
|----------------------------------|--------|----------|
| Upkeep of System | 168.53 | |
| Labor, Operation & Repairs | 694.63 | |
| Radio Operator, etc | 294.95 | 1,153.11 |

Night Watchman & Police—

| | | |
|---|--------|--------|
| Salary watchman and Special Police..... | 780.00 | |
| Watchman Supplies | 19.33 | 799.33 |

| | |
|-------------------------------|------------|
| Department Expenditures | 137,730.08 |
|-------------------------------|------------|

MISCELLANEOUS DEPARTMENT

Library Division—

| | | |
|---|----------|-------------|
| Magazines | 345.06 | |
| Supplies | 114.01 | |
| Membership dues to Societies | 41.00 | |
| Books (Gen. & Rep. L.) | 987.15 | |
| Charging Desks | 100.00 | |
| Equipment (Ref. Library) | 524.75 | |
| Supplies (Ref. Library) | 37.65 | |
| Salaries—Librarians and Assistant | 4,356.26 | \$ 6,505.88 |

Miscellaneous Items Division—

| | | |
|---|----------|--------------|
| Exp. of Trustees and Board of Visitors.....\$ | 1,016.53 | |
| Insurance | 5,335.51 | |
| Contingent and Incidentals Expense..... | 3,586.58 | |
| Ministers | 2,417.27 | |
| Y. M. C. A. Secretary | 500.00 | |
| College Catalogue | 796.19 | |
| Report to Legislature | 73.60 | |
| Commencement Expenses | 342.78 | |
| Trustees Medals | 33.50 | |
| Chapel Lecture | 175.00 | |
| Membership to National Association.... | 71.00 | |
| Examination Booklets | 283.27 | |
| Pension of J. B. Stephens | 275.00 | |
| Scavenger Service | 492.00 | |
| State Fair Exhibit | 317.53 | |
| Travel and Entertainm. Leg. Com., etc. | 411.47 | |
| Summer School | 1,621.68 | |
| Popular Bulletins | 100.00 | |
| Salary Campus Marshall | 686.64 | |
| Salary Mrs. W. M. Riggs | 2,500.00 | |
| Salary Magistrate | 100.00 | \$ 21,135.55 |

President's Office—

| | | |
|---|-----------|--------------|
| Students' Cards, Forms, etc. | 722.09 | |
| Stamps, Stationery and Supplies | 961.44 | |
| Traveling Fund | 683.05 | |
| Janitor, Janitor Supplies | 603.55 | |
| Salaries—President, Registrar, Dir. of Student Affairs, Stenographer etc. | 16,030.00 | \$ 19,000.13 |

Treasurer's Office—

| | | |
|--|----------|-------------|
| Students' Cards, Forms, etc. | 600.00 | |
| Record Books, Stationery, Postage, etc. | 775.00 | |
| Emergency Asst. ....e..... | 905.36 | |
| Premiums on Bonds | 112.50 | |
| Salaries—Treasurer and Bookkeepers | 5,844.44 | |
| Audit of Books and Accounts (Searson) | 677.98 | \$ 8,915.28 |

| | | |
|-------------------------------|--|--------------|
| Department Expenditures | | \$ 55,556.84 |
|-------------------------------|--|--------------|

RECAPITULATION

| | | |
|--------------------------------|--------------|--------------|
| Public State Work | \$ 43,371.74 | |
| Academic Department | 36,299.78 | |
| Agricultural Department | 67,355.28 | |
| Chemical Department | 14,094.36 | |
| Engineering Department | 47,179.04 | |
| Military Department | 7,163.12 | |
| Textile Department | 17,798.76 | |
| Public Utilities | 137,730.08 | |
| Miscellaneous Department | 55,556.84 | \$429,549.00 |

CADET FUND**Receipts**

| | | |
|-----------------------------------|--------------|--------------|
| Balance on Hand July 1, 1923..... | \$ 12,395.74 | |
| Breakage: | 2,926.22 | |
| Diplomas | 6.80 | |
| Room, Heat, Light, Water | 16,491.39 | |
| Hospital | 11,318.01 | |
| Incidentals | 9,654.95 | |
| Laundry | 14,038.54 | |
| Subsistence | 167,510.83 | |
| Uniforms | 41,466.97 | \$263,413.71 |
| Total | | \$275,809.45 |

Expenditures—

Expenditures from balance on hand July 1st, 1923.

| | | |
|-------------------------------|-----------|-------------|
| Labor—Carpentering, etc. | \$ 132.27 | |
| Clothing and Dry Goods | 59.75 | |
| Supplies | 72.34 | |
| Materials, etc. | 842.76 | |
| Equipment | 1,509.04 | \$ 2,616.16 |

Breakage—

| | | |
|---------------------------|--------|-------------|
| Labor—Carpentering | 945.54 | |
| Freight and Express | 7.19 | |
| Misc. Supplies | 732.27 | |
| Refunds to Students | 27.00 | |
| Materials | 281.07 | |
| Household Equipment | 933.15 | \$ 2,926.22 |

Room, Heat, Light and Water—

| | | |
|----------------------------|-----------|--------------|
| Labor—Engineers, etc. | 3,203.42 | |
| Freight and Express | 7.99 | |
| Telegrams | .30 | |
| Repairs | 302.35 | |
| Coal | 11,271.63 | |
| Office Equipment | 21.00 | |
| Misc. Supplies | 1,083.82 | |
| Refunds to Students | 266.85 | |
| Materials | 325.33 | \$ 16,482.62 |

Hospital Division—

| | | |
|--------------------------------------|----------|-----------|
| Salaries | 4,000.00 | |
| Labor | 2,832.55 | |
| Telephone and Telegrams | 49.85 | |
| Freight and Express | 94.41 | |
| Publications, etc. | 20.10 | |
| Laundry, etc. | 448.79 | |
| Coal, etc. | 95.00 | |
| Food Supplies | 1,499.14 | |
| Office Supplies | 111.28 | |
| Medical and Surgical Supplies | 958.58 | |
| Refrigerating Supplies | 129.75 | |
| Miscellaneous Supplies | 192.99 | |
| Refunds to Students | 67.43 | |
| Medical and Surgical Equipment | 33.59 | |
| Household Equipment | 1,036.34 | |
| Miscellaneous Equipment | 45.71 | 11,615.51 |

Incidentals—

| | | |
|--|----------|-----------|
| Salary—Quarter Master | 687.50 | |
| Labor—Care of Barracks | 3,010.45 | |
| Freight and Express | 20.38 | |
| Office Supplies | 11.00 | |
| Cleaning and Disinfecting Supplies | 340.58 | |
| Miscellaneous Supplies | 2,631.82 | |
| Refunds to Students | 53.95 | |
| Household Equip., chairs, etc. for rooms | 3,252.75 | 10,008.43 |

Laundry—

| | | |
|---|-----------|--------------|
| Labor | 10,448.54 | |
| Freight and Express, Tel. and Tel. | 55.79 | |
| Repairs | 91.24 | |
| Miscellaneous Printed Forms..... | 123.25 | |
| Coal | 498.55 | |
| Feed and Veterinary Supplies | 85.84 | |
| Laundry Supplies | 2,026.42 | |
| Clothing and Dry Goods | 59.60 | |
| Miscellaneous Supplies | 9.55 | |
| Equipment | 115.09 | |
| Refund to Students | 169.95 | \$ 13,683.82 |

Subsistence—

| | | |
|------------------------------|------------|--------------|
| Salaries | 5,000.00 | |
| Labor | 21,538.85 | |
| Groceries | 121,240.02 | |
| Coal | 773.74 | |
| Miscellaneous Supplies | 5,890.33 | |
| Refunds to Students | 1,751.32 | |
| Equipment | 1,026.73 | \$157,704.99 |

Uniforms—

| | | |
|---------------------------|-----------|--------------|
| Uniform Garments | 40,851.55 | |
| Refunds to Students | 1,487.28 | \$ 42,338.83 |

| | | |
|-------------------------------------|-----------|--------------|
| Balance on hand June 30, 1924 | 18,432.80 | |
| | | \$257,376.65 |
| | | \$275,809.45 |

STUDENT BANKING ACCOUNT**Receipts—**

| | | |
|------------------------------------|-------------|-------------|
| Balance on hand July 1, 1923 | \$ 2,641.87 | |
| Deposits | 58,994.44 | \$61,636.31 |

Expenditures—

| | | |
|-----------------------------|-----------|--------------|
| Checks Paid | 59,684.70 | |
| Balance June 30, 1924 | 1,951.61 | \$ 61,636.31 |

REVOLVING ACCOUNTS

Receipts—

| | | |
|-----------------------------------|--------------|--------------|
| Balance on hand July 1, 1923..... | \$ 39,984.12 | |
| Receipts for Fiscal Year | 168,991.30 | \$208,975.42 |
| | <hr/> | <hr/> |

Expenditures—

Veterinary Hospital—

| | | |
|--|-----------|--------|
| Wages—Janitoring | \$ 110.00 | |
| Freight, Express and Deliveries | 7.17 | |
| Feed and Veterinary Supplies | 102.52 | |
| Laundry and Disinfecting Supplies | 20.33 | |
| Misc. Supplies | 19.65 | 259.67 |
| | <hr/> | |

Hog Cholera Serum Work—

| | | |
|------------------------------------|-----------|-----------|
| Salaries—Clerks | 3,000.00 | |
| Telegraph and Telephone | .65 | |
| Feed and Veterinary Supplies | 15,011.58 | |
| Travel | 11.33 | 18,023.56 |
| | <hr/> | |

Nursery Inspection Tags—

| | | |
|---------------------------|--------|--------|
| Freight and Express | 24.49 | |
| Supplies (Tags) | 555.25 | 579.74 |
| | <hr/> | |

Manufacturing States Flags—

| | | |
|----------------|-------|-------|
| Supplies | 77.75 | 77.75 |
| | <hr/> | |

Summer School—

| | | |
|--------------------------------|----------|-----------|
| Salaries—Instructors | 4,179.19 | |
| Labor | 2,512.99 | |
| Food Supplies | 9,621.06 | |
| Traveling Expenses | 47.80 | |
| Printing and Advertising | 43.30 | |
| Refunds | 184.00 | |
| Fuel | 587.00 | |
| Office Supplies | 73.62 | |
| Other Supplies | 72.94 | 17,321.90 |
| | <hr/> | |

Education of Disabled Soldiers—

| | | |
|----------------------------|----------|--|
| Salaries—Instructors | 9,120.82 | |
| Labor | 318.00 | |
| Freight, Express etc | 15.96 | |
| Traveling Expenses | 82.02 | |
| Office Supplies | 17.50 | |
| Educational Supplies | 60.38 | |

| | | |
|-----------------------------|-----------|-----------|
| Refunds | 1.66 | |
| Materials | 55.00 | |
| Office Equipment | 747.95 | |
| Educational Equipment | 9.95 | |
| Buildings | 21,215.91 | 31,645.15 |

Athletic Association—

| | | |
|---|-----------|-----------|
| Salaries—Coach and Assts | 7,236.63 | |
| Labor | 809.90 | |
| Officials and Umpires | 1,300.77 | |
| Guarantees and Exps. etc. of Teams | 11,739.00 | |
| Rain Insurance | 484.24 | |
| Supplies | 6,275.56 | |
| Bleachers, Benches and Fencing | 1,597.32 | |
| Contributions to Y. M. C. A. | 2,200.00 | |
| Students Publication Posters, etc | 2,106.75 | |
| Freight and Express | 135.19 | |
| Telegraph and Telephone and Postage | 121.38 | |
| Hospital, Medical and Dental Fees | 106.50 | |
| Asso. Dues & Expenses of Delegates | 57.50 | |
| Lyceum Entertainment | 900.00 | |
| Refunds | 75.00 | |
| Repairs & Equipment | 475.84 | 35,621.53 |

Textile Cotton Sales—

| | | |
|--|-----------|----------|
| Freight and Express | \$ 186.19 | |
| Telegraph and Telephone and Travel | 138.34 | |
| Educational Supplies | 180.47 | |
| Equipment | 767.76 | 1,272.76 |

Commercial Wood Shop—

| | | |
|----------------------------|-----------|----------|
| Labor | \$ 799.72 | |
| Supplies—Lumber, etc | 411.77 | 1,211.49 |

Cadet Exchange—

| | | |
|-----------------------------------|-----------|-----------|
| Salaries—Manager and Clerks | 766.41 | |
| Freight and Express | 356.46 | |
| Repairs | 8.33 | |
| Advertising, etc | 91.04 | |
| Text Books and Supplies | 16.632.86 | |
| Telephone & Telegraph | 21.90 | 17,877.06 |

Students Loans & Medals—

| | | |
|------------------------------|--------|----------|
| Loans to Students | 150.00 | |
| Medals (Norris) | 52.89 | |
| Fort Hill Bank—Deposit | 848.66 | 1,051.55 |

Co-operative Cotton Testing—

| | | |
|---------------------------------|--------|----------|
| Labor | 810.41 | |
| Freight and Express | 42.50 | |
| Repairs | 237.02 | |
| Other Contractual Service | 176.25 | |
| Office Supplies | 53.46 | |
| Other Supplies | 273.82 | |
| Educational Equipment | 51.02 | |
| Misc. Equipment | 83.25 | 1,727.73 |

Smith—Hughes Work—

| | | |
|---------------------------------------|-----------|-----------|
| Salaries—Supervisors & Teachers | 21,778.40 | |
| Traveling Expenses | 3,747.97 | |
| Bulletins | 39.62 | |
| Office Supplies | 276.97 | |
| Misc. Supplies | 271.75 | 26,114.71 |

Insurance Sinking Funds—

| | | |
|--------------------------|-------|-------|
| Insurance Premiums | 36.82 | |
| Labor and Material | 39.12 | 75.94 |

Smith-Lever Interest Fund—

| | | |
|---|----------|----------|
| Salaries | 204.23 | |
| Freight and Express | 51.39 | |
| Traveling Expenses | 520.66 | |
| Telegraph and Telephone | 68.91 | |
| Subscription to News Papers & Pub. | 1 388.11 | |
| Miscellaneous Supplies..... | 75.96 | |
| Office Equipment | 27.19 | 2,336.45 |

Rents—

| | | |
|-----------------------------------|-----------|-----------|
| Labor | 12.20 | |
| Misc. Equipment | 291.98 | |
| Transfer to College Account | 10,700.82 | 11,005.00 |

Receiving Account—

| | | |
|-----------------------------------|-----------|-----------|
| Freight and Express | 3.94 | |
| Transfer to College Account | 16,965.87 | |
| Misc. Supplies | 10.25 | |
| Refunds—Student Fees | 14.09 | 16.994.15 |

Miscellaneous Account—

| | | |
|-----------------------------------|--------|--------|
| Supplies | 3.58 | |
| Freigh and Express | 32.82 | |
| Transfer to College Account | 245.02 | 281.42 |

Official Testing—

| | | |
|-------------------------------------|----------|------------|
| Pay & Travel of Testers | 2,889.52 | 2,889.52 |
| | | 186,367.07 |
| Balance on Hand June 30, 1924 | | 22,608.35 |
| | | 208,975.42 |

SMITH-LEVER EXTENSION FUND**Receipts—**

| | | |
|---|------------|------------|
| Federal Appropriation | 156,014.49 | |
| State Appropriations (supplemented by County appropriations) | 146,014.49 | 302,028.98 |

The following amounts are included in
this report but handled by Counties and
Winthrop College—

| | | |
|--------------------------------------|-----------|------------|
| County Appropriations | 70,722.22 | |
| Winthrop College Appropriation | 7,000.00 | 77,722.22 |
| Total all Sources | | 379,751.20 |

Expenditures—

| | | |
|---------------------------------------|------------|------------|
| Salaries—Director & Asst. Dir. | 6,785.28 | |
| Salaries—State Supervising Agents .. | 25 154.89 | |
| Salaries—Specialists | 58,632.90 | |
| Salaries—County Agents | 188,504.90 | |
| Salaries—Stenographers and Clerks ... | 26,569.05 | |
| Labor | 683.47 | |
| Supplies and Materials | 6,824.15 | |
| Communication Service | 3,185.32 | |
| Traveling Expenses | 44,131.47 | |
| Freight and Express | 923.51 | |
| Publications | 6,522.09 | |
| Heat, light and water | 607.28 | |
| Furniture and Fixtures | 7,982.81 | |
| Office rent for Agents | 3,244.08 | 379,751.20 |

HATCH, ADAMS AND FARM PRODUCTS**South Carolina Experiment Station****Receipts—**

| | | |
|---|-----------|--------------------|
| Balance on hand July 1, 1923 (Sales) | | 1,928.71 |
| Receipts from the Treasurer of the U. S. as per appropriations for fiscal year ended June 30, 1924. | | |
| Hatch Fund | 15,000.00 | |
| Adams Fund | 15,000.00 | |
| Sales of Farm Products | 35,989.24 | 65,989.24 |
| | | <u>\$67,917.95</u> |

Expenditures—

| | | |
|-------------------------------------|-------------|-------------|
| Salaries | 19,996.78 | |
| Labor | 13,713.65 | |
| Publications | 761.72 | |
| Stationery & Office Supplies | 893.35 | |
| Freight and Express | 1,116.53 | |
| Heat, Light and Water | 2,240.06 | |
| Scientific Supplies | 420.11 | |
| Sundry Supplies | 4,919.39 | |
| Fertilizers | 2,320.25 | |
| Feeding Stuffs | 10,326.82 | |
| Library | 725.82 | |
| Tools, Machinery, etc | 2,723.71 | |
| Furniture and Fixtures | 411.65 | |
| Scientific Apparatus, etc | 715.24 | |
| Live Stock | 2,421.44 | |
| Traveling Expenses | 409.06 | |
| Contingent Expenses & Communication | 503.83 | |
| Building and Land | 1,215.21 | |
| | \$65,834.62 | |
| Balance on hand June 30, 1924..... | \$ 2,083.33 | \$67,917.95 |

AGRICULTURAL RESEARCH

(Reported by College Fiscal year, Paid through Comptrolled
General's Office)

Appropriation July 1, 1923 to June 30, 1924

51,926.47 \$51,926.47

Expenditures July 1st, 1923 to June 30, 1924.—

| | | |
|-------------------------------------|-----------|-------------|
| Salaries—Scientific Staff | 14,342.45 | |
| Salary—Asst. to Director | 1,900.00 | |
| Salaries—Chemists | 1,800.00 | |
| Salaries—Supt.—Farm and Stations .. | 9,250.00 | |
| Salaries—Herdsman—Dairy & A. Hus. | 2,133.33 | |
| Salaries—Foreman, Hort. Div. | 650.00 | |
| Publications | 1,012.91 | |
| Office Supplies..... | 333.26 | |
| Labor with Experiments | 4,673.85 | |
| Labor—An. Hus. Div. | 1,206.88 | |
| Labor—Dairy Div. | 1,151.48 | |
| Tools—Implements & Repairs | 784.50 | |
| Farm Labor, etc | 932.50 | |
| Seed and Fertilizers | 4,174.28 | |
| Machinery and Equipment | 739.78 | |
| Live Stock | 400.00 | |
| Feed and Veterinary Supplies | 3,172.29 | |
| Motor Vehicle Supplies | 148.02 | |
| Miscellaneous Supplies | 69.19 | |
| Office Equipment | 46.54 | |
| Underdraining and Cleaning | 209.49 | |
| Fencing | 109.34 | |
| Misc. Small Equipment | 129.55 | |
| Traveling Expenses | 2,556.83 | \$51,926.47 |

CO-OPERATIVE BOLL WEEVIL CONTROL

(Reported by College Fiscal Year, Paid through Compt. General's Office)

Appropriations July 1, 1923 to June 30, 1924 \$ 18,851.13

Expenditures July 1st, 1923 to June 30, 1924.—

| | |
|-----------------------------------|----------|
| Salary—Scientific Staff | 6,115.83 |
| Salary—Steographer | 1,884.96 |
| Salary—Temporary Assistants | 4,880.20 |
| Telephone and Telegraph | 51.64 |
| Common Labor Producing Crop | 189.05 |
| Traveling Expenses | 1,503.40 |
| Repair Parts to Machine | 37.19 |
| Office Supplies | 113.11 |
| Motor Vehicle Supplies | 314.07 |
| Seeds and Fertilizers | 839.00 |
| Poison Supplies | 1,277.82 |
| Toilet, Sewer Disposal | 178.30 |

SUPPLEMENTARY REPORTS

| | |
|--------------------------------------|--------|
| Scientific Equipment | 659.71 |
| Motor vehicles | 14.55 |
| Dusting and Spraying Machinery | 318.83 |
| Live Stock | 39.00 |
| Office Building | 14.55 |
| Miscellaneous Expenses | 419.92 |

\$ 18,851.13

CROP PESTS AND DISEASES

(Reported by College Fiscal Year, Paid through Compt. General's Office)

Appropriation July 1, 1923, to June 30, 1924. \$ 9,672.49

Expenditures, July 1st to June 30th, 1924.—

| | |
|---------------------------------|----------|
| Salaries—Scientific Staff | 5,888.62 |
| Clerk and Steographer | 1,032.00 |
| Labor—Poisoning Work | 62.55 |
| Traveling Expenses | 2,115.33 |
| Telegraph and Telephone | 132.57 |
| Office Supplies | 441.42 |

\$ 9,672.49

LIVE STOCK SANITARY WORK

(Reported by College Fiscal Year, Paid through Compt. General's Office)

Appropriation July 1st, 1923 to June 30th, 1924\$ 49,401.08

Expenditures, July 1st, 1923 to June 30th, 1924—

| | |
|--|-----------|
| Salaries—veterinarians | 25,320.00 |
| Salaries—Assts. to veterinarians | 8,698.00 |
| Deputy State Veterinarians Fee | 155.63 |
| Traveling Expenses | 11,491.22 |
| Telegraph and Telephone | 233.96 |
| Office Supplies | 213.46 |
| Other Supplies | 1,910.36 |
| Rent | 894.67 |
| Office Equipment | 65.00 |
| Miscellaneous Equipment | 418.78 |

\$ 49,401.08

TICK ERADICATION

(Reported by College, Fiscal Year. Paid through Compt. General's Office)

Appropriation July 1, 1923, to June 30, 1924 \$ 13,406.15

Expenditure July 1, 1923 to June 30, 1924.—

| | |
|---|----------|
| Salaries—Inspectors | 5,978.33 |
| Salary Clerk | 1,750.00 |
| Wages | 1,598.00 |
| Traveling Expenses | 111.98 |
| Laundry and Disinfecting Supplies | 3,625.38 |
| Miscellaneous Supplies | 342.46 |

\$ 13 406.15

SLAUGHTERING DISEASED LIVE STOCK

(Reported by College Fiscal Year, Paid through Compt. General's Office.)

Appropriation July 1, 1923, to June 30, 1924 \$ 3,325.87

Expenditures July 1, 1923 to June 30, 1924.—

Payment to owners of diseased Livestock which
have been condemned and slaughtered 3,325.87

\$ 3,325.87

RECAPITULATION**Resources—**

Cash on hand July 1st 1923:

| | |
|---------------------------------|--------------|
| College Account | \$148,911.33 |
| Cadet Fund | 12,395.74 |
| Revolving Fund | 39,984.12 |
| S. C. Expt. Station Sales | 1,928.71 |
| Students Banking Account | 2,641.87 |

Total balances on hand July 1, 1923 \$205,861.77

Receipts for fiscal year—

| | |
|-------------------------------|--------------|
| College Account | \$404,717.22 |
| Cadet Fund | 263,413.71 |
| Student Banking Account | 58,994.44 |
| Revolving Funds | 168,991.30 |

Smith-Lever Extension Fund (Includ-

SUPPLEMENTARY REPORTS

being \$70,722.22 County and \$7,000.00

Winthrop College Fund not paid out

by Treasurer C. A. C. 379,751.20

S. C. Expt. Station Hatch and Adams 65,989.24 \$1,341,857.11

State Appropriations (Reported by College fiscal year and paid through Comptroller General's Office):—

Agr'l Research \$ 51,926.47

Co-operative Boll Weevil Control 18 851.13

Crop Pest and Diseases 9,672.49

Live Stock Sanitary Work 49,401.08

Tick Eradication 13,406.15

Slaughtering Diseased Live Stock 3,325.87 \$146,583.19

Total \$1,694,302.07

Expenditures—

College Account \$429,549.00

Cadet Fund 257,376.65

Student Banking Account 59,684.70

Revolving Fund 186 367.07

Smith-Lever Extension Fund (Including Counties and Winthrop College Appropriations not handled by

Treas. C. A. C. 379,751.20

S. C. Expt. Station Hatch and Adams 65,834.62 \$1,378,563.24

State Appropriations (Reported by College fiscal year and paid through Comptroller General's Office):—

Agr'l Research \$ 51,926.47

Cooperative Boll Weevil Control 18,851.13

Crop Pest and Diseases 9,672.49

Live Stock Sanitary Work 49,401.08

Tick Eradication 13,406.15

Slaughtering Diseased Live Stock 3,325.87 146,583.19

\$1,525,146.43

Balance on hand all sources June 30, 1924 169,155.64

\$1,694,302.07

DISTRIBUTION OF CASH JUNE 30, 1924:—**Interest Bearing Deposits:**

| | |
|---|--------------|
| Bank of Anderson, Anderson, S. C. | \$ 10,439.84 |
| Farmers and Merchants Bank, Anderson, S. C. | 10,843.88 |
| National Bank of Sumter, Sumter, S. C. | 20,000.00 |
| Farmers Bank, Abbeville, S. C. | 20,000.00 |
| Peoples Saving Bank, Abbeville, S. C. | 4,000.00 |
| Union Saving Bank, Bennettsville, S. C. | 25,000.00 |
| Bank of Greenwood, Greenwood, S. C. | 17,000.00 |
| The Fort Hill Bank, Clemson College, S. C. | 3,000.00 |
| Commercial Bank, Greenwood, S. C. | 15,500.00 |
| Bank of Pendleton, Pendleton, S. C. (Time Deposit) | 5,000.00 |
| Carolina National Bank, Anderson S. C. | 5,000.00 |
| National Bank of Newberry, Newberry, S. C. | 20,000.00 |
| Columbia National Bank, Columbia S. C. | 2,000.00 |

\$157,783.72

Checking Account—

| | |
|--------------------------------------|--------------|
| Bank of Pendleton, S. C. | \$ 47,348.52 |
| Less Overdraft Smith-Lever Fund..... | 19,020.80 |
| | <hr/> |
| | \$ 28,327.72 |

Less Checks Out—

| | | |
|---------------------------|-------------|--------------|
| General Account | \$15,928.21 | |
| Smith-Lever Fund | 2,979.20— | \$ 18,907.41 |
| | <hr/> | <hr/> |
| Total Bank Deposits | | \$167,204.03 |
| Cash in office | | 1,951.61 |
| Total | | <hr/> |
| | | \$169,155.64 |

REPORT OF 1924 BOARD OF VISITORS

Bennettsville, S. C.

July 10, 1924.

TO THE BOARD OF TRUSTEES,

Clemson Agricultural and Mechanical College,

Clemson College, S. C.

Gentlemen:—

The 1924 Board of Visitors of Clemson College completed in accordance with their schedule, with the exception of the inspection of barracks, the annual inspection provided for the Board. The majority of us had never before visited Clemson College, and we left ardent advocates of the College, and of any reasonable request for funds necessary for its extension.

Our tour of inspection was of greater benefit to us than to the college; and such, we believe, will continue so long as the institution is run with its present thoroughness. The management of the various departments of the college stands as a monument to its lamented president, Dr. Riggs. While we did not over rate the importance of our Board or of its annual inspection, yet we entered upon the duties of this work with the desire to aid by intelligent criticism; but, after the completion of our inspection, we must say frankly that we found nothing to criticise and every department deserving of commendation. Frankness requires that this statement be made in justice to the remarkable management of a very remarkable institution.

We found need for additional buildings and equipment, but we found that the need therefor had already been brought to the attention of the proper authorities. We believe, and so recommend, that the building program already outlined be provided by the Legislature in accordance with the plans of the college, which plans, we understand to be conditioned on the passage of the proposed bond issue for enlargement of the several colleges of the State. Certainly the barracks should be immediately enlarged to the end that not more than two cadets should stay in one room. Justice to the individual cadet and to the class work demands that this should immediately be provided for. The practice of requesting from the Legislature only what is needed, and of showing of needs in concise and itemized statements is commended. We were pleased with the discipline; with the cooperation of the military authorities with the other officers of the college; with the apparent desire to have the military

work interfere as little as possible with the regular work of the college, and for which it was founded. The uniform is comfortable and neat; the cadets healthy, strong and a splendid body of young gentlemen, apparently interested in their college and its work and history with which they were well acquainted. The drill was better than we had expected; the esprit de corps splendid, and, as near as it seems possible. Clemson College is made a great big home for the students, and every effort is made to keep them healthy and provide for their comfort.

The co-ordination of the theoretical and practical shows years of careful study and the faithful carrying out of the trust imposed by the will of Mr. Clemson. It probably could not be carried to any greater extent along practical lines, yet we see nothing that is practical that should be taken away.

After all, the spirit of the cadets and the spirit of the officers which permeated every department of the college, were the outstanding features of our inspection. The thoroughness of the accounting system is most highly commended. South Carolina not only gets the value for every cent appropriated for the varied activities of the school, but a perfect accounting is made of all sums received.

While these annual inspections could not be but cursory, they are sufficient to make ardent enthusiasts of those who see the work that is being done at this institution. We wish in closing to express our appreciation of the courtesies afforded us by the officers of the institution. Only one of our members had ever attended Clemson College as a student; but after our inspection, we are glad to subscribe our names as enthusiastic supporters of the management of this college and its truly remarkable work for the betterment of South Carolina. An institution of this character cannot but yearly add to the citizenship and the up-building of South Carolina. Taxes expended for the carrying on and the enlargement of such a work constitute the best investment that a State can make.

Respectfully submitted.

(Signed) S. S. TISON,

Secretary Board of Visitors.

REPORT OF EXTENSION SERVICE

Mr. S. B. Earle, Acting President,
Clemson College, South Carolina.

Dear Sir:

The year 1924 has been a very freakish one from an agricultural standpoint. We had a cold, wet spring followed by a continued drought that was very disastrous for the corn, bean, and pea crops of the entire state. The acreage in perishable crops in the lower part of the state was increased and the yields were more or less satisfactory, but marketing conditions and the high freight rates were of such a character that the farmers sustained heavy losses with practically all truck crops grown. While the cotton crop in the Piedmont has exceeded our early expectations, the cotton crop in the lower part of the state has been disastrously short. With the short crop of cotton in these counties and the failure of the grain and hay crops, the prospect for next year is anything but encouraging, and our people are again called upon to practice rigid economy in the home and on the farm.

Great progress has been made in establishing a diversified system of agriculture. The acreage in food and feed crops for man and beast has been increased in the last five years by 43 percent, while the acreage in cotton has decreased 33 percent. Dairy cows have increased 21 percent and swine 19 percent, which shows a healthy interest being developed in livestock. Twenty cars of poultry were shipped from the state as against seven cars during last year.

It is gratifying to note that in the past two decades interest has increased in every aspect of agricultural life and agricultural industry not only in South Carolina, but throughout the United States. It is today more generally recognized than heretofore that the prosperity of this fundamental industry is not only essential to the success and prosperity of all other industries, but that it is to a large degree the economic basis of social progress and political stability. Like other industries agriculture presents two classes of problems. These may be designated as the material and the human. As in other industries, also, the former has until quite recently received far more attention than the latter. Scientific research and inventive genius have done much to solve the problems of agricultural technique and to increase the effectiveness of farming equipment and methods of operation. Far less, however, has been accomplished in the matter of improving living and working conditions, or in other words, solving the human problems. Of these human problems tenancy was among the first to be recognized and studied. South Carolina can never hope to reach that stage of development from an agricultural standpoint until some effort is made to solve

the tenant problem (which is a human problem). When we realize that 65 percent of our lands are cultivated by tenants and 37 percent of the 65 percent of tenants move each year, we can understand how it is impossible to establish a stable and progressive agriculture except on the 35 percent of our lands that are being operated by the owners who live on their farms. I make bold the statement that, notwithstanding the great handicap of a large tenant population, we are developing greater diversification in South Carolina than in many states that are supposed to have a well worked out system of agriculture. While I am a hopeless optimist when I think of the potential power of South Carolina, I confess that under existing conditions I realize that many changes will have to be made in our rural problems before we can have a self-satisfying rural civilization.

COUNTY AGENT WORK

Extension work is characterized by county and home demonstration agents supported by specialists in most of the important lines. All counties in the state except Bamberg, Edgefield, Horry, Jasper, and Beaufort provided funds for county demonstration agents for the year 1924. In a few of the counties the appropriations were rather small, so that we had difficulty in obtaining efficient agents at the salary available. However, the people are beginning to realize that it is more economical to have a well trained experienced agent with a natural ability to do extension work than it is to employ a man without qualifications. In employing county agents, for the past several years, we have followed the policy of securing men who have not only been reared on the farm, but who have completed a regular four year course in a first class agricultural college, and who have, in addition, had several years successful agricultural experience. By adhering to this policy we have employed very few unsatisfactory agents. The county agents are located in the county seats, where they are available for consultation regarding any agricultural problem.

We began several years ago to equip county agents for efficient work by supplying them with office furniture, office space (where needed), and part-time stenographic help. We realize that unless county agents, who make the contact between Clemson and the United States Department of Agriculture on one hand, and the citizens of the state on the other, are efficient, the whole extension scheme falls down. Therefore, by adhering to the policy of equipping county agents' offices for efficiency over a period of three years, we have just about completed this movement for better service. The county agents prepare once a month a report of their activities setting forth all they did each day, whom they visited and

object, together with an account of any demonstrations, meetings, newspaper articles, etc. These reports show every detail of their activities and keep the headquarters office and the district agents fully informed about extension work. Once a year each agent makes an annual report summarizing the results of his work and giving a statement of his activities. A plan of work is prepared annually for extension work in each county, and the monthly and annual reports are compared with these plans in order to see how well definite policies are carried out for the upbuilding of the agriculture of the county. The following figures are a summary of county agent work for the year 1923. The figures for 1924 are not yet available:

| | |
|--|-----------|
| Number of farmers worked with in cooperative buying and selling | 3,056 |
| Saving on supplies purchased | \$66,216 |
| Extra price on products sold due to cooperative agent's assistance | \$303,506 |
| No. farmers grading and standardizing products for market with help of agents | 1,369 |
| Number bee keeping demonstrations | 84 |
| Number hives in these demonstrations | 298 |
| Increase per hive due to better methods | 36 pounds |
| Number farmers advised re use of lime | 435 |
| Tons of lime or limestone so used | 3,894 |
| Number of farmers induced to grow green manure or cover crops for plowing under | 5,825 |
| Number communities in which the extension program has been worked out by extension agents and people | 288 |
| Number clubs carrying on extension work— | |
| Men, 83—Membership | 1,139 |
| Boys, 131—Membership | 2,392 |
| Community, 61—Membership | 2,038 |
| Total number farm visits made during year | 20,037 |
| Number different farms visited | 9,573 |
| Total number home visits made | 4,332 |
| Number different homes visited | 3,244 |
| Number office calls relating to extension work | 25,955 |
| Number individual letters written by county agents | 29,496 |
| Number of different circular letters prepared and mailed | 539 |
| Copies of circular letters mailed | 128,779 |
| Number articles prepared for local papers | 2,107 |
| Number of demonstration meetings held— | |
| Men, 499,—Attendance | 9,685 |
| Boys, 281—Attendance | 2,910 |
| Communities, 138—Attendance | 6,314 |

| | |
|---|--------|
| Boys' Club encampments held, 28—Attendance | 2,805 |
| Number meetings at which were shown lantern slides | 43 |
| Number meetings at which were shown motion pictures | 77 |
| Number boys' judging teams trained | 26 |
| Total number extension meetings of all kinds | 1,670 |
| Total attendance | 49,603 |

Work of Specialists

The specialist bears about the same relation to the county agent that medical specialists bear to one's family physician. Frequently some plant disease, orchard problem, or other agricultural problem arises which a county agent needs assistance in handling properly. The specialists assist the county agents with such problems. We have maintained specialists in the following lines throughout the year: agronomy crop improvement, pastures, cash crops, dairy livestock, horticulture, poultry, marketing, plant diseases, insect pests, bee keeping, and boys' club work.

Forestry

Owing to the growing importance of the forestry problem in this state, we secured, during the latter part of the year, a specialist in forestry, whose duty is to work with land owners of the state in the matter of conserving and protecting this valuable source of income, which is in danger of suffering a serious setback. There are thousands of acres of land in this state which are suitable for little else than the growing of timber under present economic conditions. The state has always secured a very large income from timber, and it is important that this income be built up to even higher figures.

Livestock

A number of purebred boars and sows have been placed in the various counties. The scarcity of money and the relatively low price of hogs have been drawbacks to this line of work.

Many farmers have been assisted in balancing their rations for the boar, the brood sow, small pigs, and fattening hogs, using home grown feeds as much as possible. With the decline in prices of hogs, we have tried to impress upon the farmer the importance of producing pork as economically as possible by the use of the proper combination of feeds and forage crops. Hogging down has been encouraged where the crops are under fence.

A more liberal use of forage crops, such as rape, rye, oats, barley, soybeans, cowpeas and velvet beans, has been encouraged. These forage crops have been supplemented by permanent pastures consisting of carpet grass and lespedeza for the low country and Bermuda grass for the Piedmont.

Advice has been given as to the best time to breed the sows for spring and fall litters, care of the sow at farrowing time, care of the sow and litter, and care of the pigs from weaning until marketed. Wherever it can be conveniently done we have advised farmers to put their hogs on the early fall market before the heavy run of hogs is ready to be shipped.

Assistance has been given in the cooperative marketing of hogs in carload lots. In general, cooperative shipments have been satisfactory, and this practice is growing in popularity.

Demonstrations in the cutting and curing of pork have been carried on in a number of counties, with the idea of getting a better product and reducing losses from spoiling and from insect pests.

Recently there has been much interest taken in sheep in this state. Many inquires have come from farmers asking where they may secure sheep for breeding purposes, and as a result many sheep have been placed in some of the counties. Early spring lambs seem to be the most attractive proposition, and the farmers are using Southdown or Shropshire rams and native ewes for this purpose.

Appreciating the fact that the lack of adequate fencing is one of the greatest drawbacks to the livestock industry in the state, fencing demonstrations were put on in a number of counties. Fences were erected in prominent places to illustrate the best fencing material and the proper method of construction.

Dairying

Dairy work during this year has been along the following lines: bull associations, dairy calf clubs, feeding and management, dairy organizations, creamery development, purchase of dairy cattle, and introductory work through meetings.

In the Piedmont section of the state, definite programs for all day annual meetings of bull association members have been worked out, and six such meetings were held during the year with a total attendance of over 1000 farmers. Regular annual meetings in other active associations were held for the transaction of business. There are now fourteen active associations in the state with a membership of 561, owning 74 purebred registered bulls of the Jersey or Guernsey breed and 257 purebred cows. Members also own 1943 grade cows.

There is need for 2500 good purebred dairy bulls in South Carolina. Unfortunately, the price of cotton fluctuates in such a way as to keep our farmers from taking a permanent interest in improving the quality of milk cows as they should. To succeed with any plan of improvement, it should be adhered to over a period of years. In order to improve the milk cows it is not only

necessary to use better bulls, but more feed and better care in growing out the daughters of these well bred bulls.

Feeding and management work is the basis of all livestock progress. Especially is it necessary to use home-grown feeds and to develop a system of farming under which home-grown feeds are produced and livestock maintained to consume these feeds. Nineteen feeding and management demonstrations were conducted in three counties, and some very valuable experience secured on the part of the farmers feeding for butter fat. The following shows the results of one year's work by Mr. Ed Spencer, of Cheraw, South Carolina, who milked six cows in 1922 and 1923. His livestock was operated as one enterprise, the skimmilk being used as part of the ration of the poultry and hogs.

| | |
|--------------------------------------|-----------|
| Butter fat sold..... | \$600.00 |
| Poultry products..... | 101.00 |
| Pork products..... | 200.00 |
| 3 heifer calves at \$15..... | 45.00 |
| 35 tons of stable manure at \$2..... | 70.00 |
| <hr/> | |
| Grand Total..... | \$1016.00 |

In March, 1923, Mr. Spencer increased his herd to eight cows. He fed a mixture as follows:

30 lbs. of corncob meal
200 lbs. of velvet bean feed
100 lbs. of cotton seed meal
Peavine hay

The velvet beans were grazed from the field during the fall and were later fed in the ration. The following indicate the type of home-grown feeds used by farmers in different sections of the state:

Mr. E. F. Hammond, of Kershaw, South Carolina.

300 lbs. of velvet bean feed
200 lbs. of cotton seed meal
100 lbs. of wheat bran
Peavine and sorghum hay

Mr. C. B. Johnson, Heath Springs, South Carolina.

200 lbs. of corncob meal
200 lbs. of velvet bean feed
100 lbs. of cotton seed meal
Peavine hay

Mr. E. J. Miller, Jefferson, South Carolina.

200 lbs. corn meal
100 lbs. of bran
100 lbs. of cotton seed meal
Peavine and sorghum hay

Specialists and agents assisted in the planning and construction of 22 new silos, 20 dairy barns, 15 milk houses, and in the remodeling of 52 barns so as to adapt them to dairy cattle use. They assisted 535 farmers in balancing rations for dairy cows.

Among the organizations with which our dairy specialists have worked during the year are the following:

- South Carolina Jersey Breeders' Association
- South Carolina Milk Producers' Association
- South Carolina Guernsey Breeders' Association
- South Carolina Creamerymen's Association
- Tri-county Guernsey Breeders' Association
- Florence County Breeders' Association

Two new plants have been established in the state during the year, one at Anderson and one at Saluda. Following is a list of the active creameries with some of the facts regarding their business:

| Name and Location | Butter made per Month | Miscellaneous |
|------------------------------------|--------------------------|-------------------------|
| Chester Creamery, Chester | 14,000 lbs. | Market milk |
| Sumter Creamery, Sumter | 4,000 lbs. | |
| Standard Creamery, Sumter | 8,000 lbs. | |
| Colonial Creamery, Florence | 9,000 lbs. | Poultry and eggs |
| West End Dairy, Charleston | 8,000 lbs. | Whole milk |
| Summerland Creamery, Batesburg | 7,000 lbs. | Poultry and eggs |
| Saluda Creamery, Saluda | 2,000 lbs. | Poultry and eggs |
| Newberry Creamery, Newberry | 6,000 lbs. | Market milk |
| Greenwood Creamery, Greenwood | | Principally market milk |
| Anderson Creamery, Anderson | | Principally market milk |
| C. C. Burgess Creamery, Greenville | 2,500 lbs. | Principally market milk |

The price paid for butterfat at all of the creameries ranged from the quotations on the Chicago standards to two cents above this.

The prevailing opinion among the creamery men is that the present high price of cotton and the good crop is retarding dairy development.

It seems to us that there are enough creameries in the state at the present time; in fact, more than enough, and that to establish additional creameries now merely means that all must operate with a smaller volume of business and, therefore, inefficiently and unprofitably to farmers. One of the principal lines of work that we must engage in is an effort to have a better quality of cream produced and delivered to the creameries. It is impossible to make a high grade of butter from poor, low grade cream, and our butterfat industry can survive only through the production of a high grade butter.

Agronomy

Agronomy extension work during 1923 was conducted along the following lines: First, soils and fertilizers; second, crop improvement through plant breeding; third pasture and forage crops; fourth, development of cash crops other than cotton.

The improvement of soils through the proper rotation of crops and through the intelligent use of fertilizers has always been one of the main lines of extension work throughout the state and has been conducted this year perhaps more effectively than usual. During the past thirty years the average yield of the principal crops in the state has been increased about 80 percent. This increase has been due largely to the more efficient use of fertilizers and to the growing of soil building crops and the use of better seed. At the present time advice on the use of fertilizers for cotton is to use more per acre on fewer acres. This seems to be a wise practice under boll weevil conditions. It has been found that most of the practices which increase the yields per acre also increase the profits in farming. A statement is given under the county agents' projects showing the number of demonstrations conducted in the use of soil-building crops and with the proper use of fertilizers.

The plant breeding started a number of years ago was carried through this year in a very satisfactory manner. The experience of 1923 indicates that there is quite a demand for better seeds, and especially for improved cotton seed for use under boll weevil conditions. Herein is pointed out the wisdom and foresight which prompted the starting of this work of improving cotton seed in 1914. If we had waited until the present time to start this work, a number of years would still be required to secure results. Whereas, as the matter now stands, there are various well developed sources of cotton seed from which progressive farmers are able to obtain better and earlier maturing seed than has been possible before. It is hard to calculate the value to the state of this improvement in seeds.

We have conducted in the state this year, with the assistance of specialists in forage crops and pastures, 318 demonstrations in better permanent pastures, 97 in temporary pastures, and 384 in forage crops. Most of the pasture demonstrations have been very successful. If dairying and livestock production generally is to succeed it must be largely on the basis of improved pastures. We cannot compete with the corn belt farmers in livestock production at the present time if we are to depend upon corn and other grains fed in the barn. However, our livestock possibilities on the basis of pastures, forage and grazing crops are superior to those of the middle west, and it on this basis that we must make progress with livestock. Over a very large part of the state, it has been found that a mixture of carpet grass, lespedeza and Dallis grass makes good grazing, and in every part of the state there is some suitable mixture of grasses and clovers which can be used to greatly improve the grazing.

In connection with the development of cash crops other than cotton the time of the specialists this year has been devoted to soybeans, peanuts and cowpeas, 397 demonstrations being established throughout the state with assistance given by the specialists. The county agents conducted many more demonstrations, these being shown under the county agent project.

The progress made this year in developing the use of soybeans has been particularly satisfying. In 1921 the acreage in soybeans in South Carolina was listed by the United States Department of Agriculture as 1000 acres. In 1923 this had been increased to about 20,000 acres, most of this increase being due to the work of extension agents. Another indication of the great interest in soybean seed production is the fact that one manufacturer of soybean harvesters sold 58 machines in 1923 as compared with none in 1922. The outstanding counties in the production of soybeans are Orangeburg and Calhoun. These counties have produced approximately 15 carlots of soybeans for sale. The most popular varieties are Mammoth Yellow, Biloxi and Ootootan. The growing of peanuts for market is gradually developing into an important industry. The following figures indicate the development of this industry in South Carolina:

| Year | Acreage | Yield per Acre, lbs. | Price per lb. cents |
|------|---------|----------------------|---------------------|
| 1919 | 13,000 | 950 | 9.5 |
| 1920 | 31,000 | 950 | 8.0 |
| 1921 | 36,000 | 825 | 4 |
| 1922 | 36,000 | 760 | 5 |
| 1923 | 39,000 | 835 | 7 |

In some cases where farmers discontinued the growing of peanuts it has been because they tried to make of it a speculative enterprise rather than a steady, year-to-year business for which they equipped their farms, trained their labor, and studied their markets. Most of the counties in the eastern and southern parts of the state are suitable for producing some peanuts. There are various problems to be worked out in connection with this industry, however; for example, the fact that to handle the crop efficiently a peanut picker should be available, and these machines cost \$500 or more each. Very few farmers are able to purchase such machinery alone, but it would seem that here is a field for the cooperative ownership of machinery among a number of neighboring farmers.

Horticulture

"To show the actual value in dollars and cents of taking care of home orchards, we arranged to keep accurate records on a number of home orchards where directions had been carried out. At the close of the season, after the first fruit had all been picked and measured, and after the cost of the spray and labor had been

deducted, it was found that the cash value of the fruit produced averaged \$211 per acre.

"Below is a list of some of these demonstrators who made outstanding records. The figures opposite their names represent the number of dollars worth of fruit sold, in addition to a good home supply.

| | |
|--|--|
| E. A. Brown, Camden, S. C. | \$150 from 75 trees |
| W. H. West, Whitestone, S. C. | \$250 from 100 trees |
| P. H. Woodfin, Campobello, S. C. | \$100 from 40 trees |
| J. J. Gentry, Landrum, S. C. | \$150 per acre from 3 acres in grapes |
| J. J. Gentry, Landrum, S. C. | \$100 from 50 trees |
| B. F. Freeman, Liberty, S. C. | \$136 from 7 old renovated apple trees |
| Arthur Agnew, Greenville, S. C. | \$ 50 from 7 peach trees |
| G. M. Barnett, Westminster, S. C. | \$100 from 250 grape vines |
| Henry Cox, Westminster, S. C. | \$200 from 300 grape vines |
| J. B. Bramlett, Marietta, S. C. | \$1,000 from 28 old trees |
| Russel Jeter, Santuck, S. C. | \$40 from 50 grape vines |
| C. A. Fincher, Union, S. C. | \$250 from 65 trees |
| O. T. Belue, Union, S. C. | \$300 from 150 trees |
| J. A. Kibler, Newberry, S. C. | \$250 from 100 trees |
| J. J. Freeman, Hickens, S. C. | \$500 from 300 trees |
| J. W. Blackwell, Jefferson, S. C. | \$175 from 130 trees |
| N. P. Watson, Chesterfield, S. C. | \$400 from 200 trees |

"All of our spray rings are proving successful and are getting outstanding results. Our oldest spray ring at Walhalla was at first handled by two boys who operated it with a barrel spray pump. It has grown to such an extent that now we have a first class power outfit, which is being operated by Mr. Sam Isbell, one of our commercial growers.

"In the development of the commercial orchard industry, assistance is given from the selection of the site to the harvesting and marketing of the fruit.

"In order to make ventures in commercial orcharding successful, agents have arranged several 'See and Learn' tours to commercial sections; have held orchard schools and demonstrations, where special emphasis was laid on all phases of orchard management; have kept before the people, by circular letters and personal visits, the idea that good orchard management is necessary to success.

"Peach growing in the Sandhills and in the upper part of the Piedmont has gained more outstandingly than any other fruit project. The acreage planted to this fruit has been doubled during the year covered by this project, at present it is a major horticultural enterprise. The development of this enterprise is a direct outgrowth of our successful demonstrations. At Greer, South Carolina, one of our demonstrators, Mr. J. V. Smith, has an orchard on the line of Greenville and Spartanburg Counties and has been getting a gross return of \$500 per acre for a number of years

until this year when a late freeze injured his crop. As a direct outgrowth of this demonstration, we now have forty-six commercial orchards in these two counties. Like results can be traced in Chesterfield County to Mr. H. C. McCloud, McBee, South Carolina, who has made an average of \$450 per acre gross. In Sumter County the development revolves around Mr. J. F. Williams, who has a successful home orchard.

"Apple growing has increased by leaps and bounds in Oconee, Pickens, Greenville and Spartanburg Counties, where the soils are ideal. Just a few years ago you could count all of the commercial orchards of any size on one hand, now we have 50 orchards, all of which show promise of well developed industry.

"Dewberry growing has increased from six acres two years ago to 210 acres now. All of this traces back to the success of our first demonstration with Mr. C. A. Guner, McBee, South Carolina, who averaged \$600 per acre for several years. Plants have been ordered for more than 100 acres that will be planted during the fall and winter of this year.

"Grape growing at present shows more promise for the future than any other fruit. Although our plantings are very small at present, we are receiving numerous inquires as to varieties, soils, etc. We now have a number of successful demonstrations that are creating a great deal of interest.

"Extension work along this line covered the successful production or special problems leading thereto of sweet potatoes, Irish or white potatoes, cantaloupes, cucumbers, tomatoes, onions, snap beans, spinach, English peas, celery, asparagus, lettuce and strawberries. The progress made has been satisfactory with work noticeably increasing."

In South Carolina as in other southern states, the economic situation demands that there should be a high class vegetable garden on each farm. Conditions in South Carolina are such that one should harvest some vegetables from the garden each month in the year. Likewise something could be planted each month. Properly planned and cared for, a given area set aside for intensive gardening furnishes far greater remuneration than could possibly be realized if it were planted to any other crops. In addition, the health value of these vegetables in the human diet should be considered, as well as the satisfaction of having fresh vegetables rather than vegetables shipped from a distance. Realizing the importance of the foregoing statements, we exerted every effort to have a good home garden on every farm in the state.

To stimulate interest in home gardening, the specialists prepared monthly "garden letters," and mailed copies to 405 farmers throughout the state each month. These letters contained informa-

tion as to vegetables that should be planted each month, the amount of seed to plant, the preparation of land and the cultivation that should be given, etc.

Poultry

The development of farm flocks of poultry is the most important line of poultry work. An effort is made to get farmers to increase the size of their flocks to approximately 50 hens per farm and to change from mongrel poultry to some suitable standard breed. By giving instructions in feeding, management, housing, etc., in connection with these larger flocks, many farmers have been enabled to realize an income from this source; whereas, in the past, with chickens of mixed breed and with hit or miss methods of feeding and management, barely enough poultry has been kept to supply home needs.

Several county poultry associations have been organized and many community poultry associations. These associations are organized for the purpose of enabling their members to develop the use of standard breeds more rapidly and also to enable them to cooperate in selling poultry products and buying poultry supplies more economically.

During this year 26 carlots of live poultry were shipped from this state to northern markets.

In connection with boys' club work, it is interesting to note that 100 boys selected poultry as the project in which they conduct their work. This is indicative of the interest in poultry throughout the state. A letter is sent each month to these boys giving them timely information.

The poultry specialist has prepared each month and mailed to a large number of farmers and others of the state a monthly letter setting forth timely information regarding poultry work.

Marketing

The figures below show the carlot shipments of South Carolina's important truck and fruit crops for the season of 1923, the number of demonstrations given by market agents in the grading and packing of these crops, and the number of inspections and demonstrations in car loading.

SUPPLEMENTARY REPORTS

| CROPS | Total Carlot Shipments | No. Demons. in Grading and Packing | No. Inspections and Demos. in Car Loading |
|----------------|------------------------|------------------------------------|---|
| Asparagus | 154 | 27 | 12 |
| Beans | 503 | 27 | 12 |
| Cabbage | 3340 | 48 | 48 |
| Cantaloupes | 70 | 3 | 2 |
| Celery | | 5 | |
| Corn, sweet | 6 | 17 | 5 |
| Cucumbers | 724 | 4 | 3 |
| Lettuce | 576 | 74 | 20 |
| Onions | 5 | 27 | 3 |
| Peaches | 16 | 22 | 6 |
| Pears | 2 | 6 | 2 |
| Potatoes | 4208 | 1212 | 1115 |
| Radishes | 15 | 6 | 6 |
| Squash | | 5 | |
| Strawberries | 64 | 7 | 7 |
| Sweet potatoes | 254 | 345 | 250 |
| Tomatoes | 433 | 44 | 5 |
| Watermelions | 3090 | | |
| Spinach | 422 | 5 | 6 |
| Turnips | 6 | 6 | 6 |
| Carrots | 1 | 1 | |
| Grapes | | 2 | |
| Totals | 14789 | 1873 | 1499 |

Total estimated attendance all demonstrations.....12,250

For several years we have realized our handicap in having the farmers of this state grasp the matter of standard grades and apply them religiously. For the first time we were able to line up the Federal Food Products Inspection Service of the Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C., for the 1923 season on the Irish potato crop. Because of a late start we did not have enough force to inspect the entire tonnage, but we inspected 1,091 cars out of 4,208 that left the state. Twelve additional men were hired to do this inspection work, and were paid out of funds collected by assessing each car of produce. In the words of the shippers of the Charleston and Beaufort district, this is one of the best pieces of work that has ever been done in that section. They could not say too much for the service. Looking at the demonstration side of the work, the side which we are mainly interested in, it is clear that the demonstrations held in that area are bound to be lasting. Many of the growers told us that they did not know what grading meant

until this season. Officers of the principal truck shipping associations of that district stated that our work had enabled the growers to get better prices and top the market, which some of them had not been doing before. It made the work easier for the associations. It made the sales stick as never before. It helped to bring about f. o. b. sales, and it made the growers realize that we were interested in them and trying to help them. The season of 1924 was not quite so successful owing to flooded markets and large percentage of off grades of potatoes. However, more cars of potatoes were inspected. Also peaches were inspected this season.

Entomology

The entomological work has consisted largely of boll weevil control demonstrations, and insect pest control work in connection with various other crops, including orchards and gardens. The control methods are definitely worked out and applied with the assistance of county agents, and are listed as demonstrations under county agent projects.

An additional line of work deserving mention is beekeeping. Four principal activities in connection with beekeeping that have been most important are as follows:

1. Early stimulation for the spring honey flow, which in this state is of the greatest importance. This campaign also included propaganda for the prevention of swarming, as some people are still under the impression that the efficiency of bees is indicated by the number of swarms that are cast during a season.

2. Requeening and transferring.

3. The preparation of bees for outdoor wintering.

4. Beekeeping schools and the organization of beekeepers' associations.

Plant Pathology

In the vicinity of Blackville a large acreage of fertile land is devoted to the production of cucumbers for the northern markets. Within the last few years the growers have suffered great losses on account of downy mildew, a disease that farmers attribute to rainy weather. No disease control measures had ever been attempted until 1923. When the proposition was placed before the growers it met with a general lack of interest. Three demonstrations, however, were located with Messrs. Herman Brown, Hal Still, and J. H. Farrel. These demonstration areas were carefully treated with Bordeaux mixture applied with a barrel spray pump. The picking of cucumbers was started on June 2, and finished on June 18. On the last day the unsprayed sections were blighted down and had no fruit, while the treated demonstrations were still green and showed a heavy setting of cucumbers.

During the actual picking period the sprayed rows in one plot produced 684 pounds of cucumbers, as compared with 571 pounds on the unsprayed demonstrations. As a result of this work the cucumber industry will be continued in that district; whereas, many growers would otherwise have been forced to abandon it. The cucumber industry in that territory is a two hundred thousand dollar business.

The treatment of cantaloupes to prevent mildew was demonstrated in very much the same way as that described above. On untreated fields the mildew began to show about June 20, and by July 3 the unsprayed fields were practically dead and picking had to be discontinued. On the other hand, the sprayed areas held up and produced good melons. Mr. Priester at Cace continued to ship from his sprayed field until about July 20. Good melons were picked from most of the sprayed fields until July 18.

Watermelon anthracnose is a very serious disease in Allendale and Hampton Counties and has been so recognized for several years. The specialist and the county agents in these counties put on a large number of demonstrations in spraying this crop to prevent anthracnose. The first spray was applied in each when the vines first began to run and was repeated at ten to fifteen day intervals until about a week before picking began. This means that four or five applications were made in each case. On July 15 practically every field that had not been sprayed was entirely blighted down with anthracnose, while the sprayed fields were in good condition. One large grower at Kline stated that his field was fifty percent better where sprays were applied. Another at Allendale estimated that sprays increased his yield ten to fifteen cars on an acre that would not have produced more than twenty cars without spraying. It appears that this disease-control work is one of the principal factors in producing a crop of melons, and the regular program of spraying will be a part of the system of growing melons in the future.

A survey and control measures have been worked out for several other crops including sweet potatoes, grapes, peaches, pecans, and a number of truck crops. This survey indicates that plant diseases are yearly becoming more important in this state and will require much more attention in the future than farmers have been giving.

Boys' Club Work

Although agents give all possible attention to the difficult agricultural problems of the current year, it would be folly to entirely neglect a long view ahead with concern for the type of farmer, his mental and physical equipment, and his practical fitness for

leadership, who will be in charge of agricultural affairs one and two decades hence. Boys' club work deals with farm boys in groups called boys' community clubs. It enlists the cooperation of parents and friends and with their help aids in the development of head, hands, heart, and health. Very satisfactory progress was made this year in most counties.

More counties undertook the work this year than ever before, more clubs were organized, the membership more than doubled, and more summer camps, fall club shows, and boys' club exhibits were held; also more boys attended the Clemson College short course—all of which is evidence of the progress made this year.

A significant and important fact regarding this line of work is that it reached not only the sons of well-to-do families, but many poorer boys and sons of tenant families who, aside from club work, receive very little attention and encouragement from any influence outside the home. Particularly because club work reaches these boys enlarging their vision and possibilities, and developing in them the best characteristics of American citizenship, this work deserves the endorsement of all, and the time of voluntary local leaders everywhere. The number of clubs that can be organized and conducted depends to some extent upon the number of such adult leaders available.

Publications

The publications work of the Extension Service could not be successful were it not for the vision of the editors of the newspapers throughout the state. A great many of the papers now arrange a special agricultural page once or twice per week, and practically all of them include a great deal of agriculture news and information, which makes their papers much more valuable and much more acceptable to farmers of the state. Our Publications Division cooperates with the newspapers and gives all possible assistance in the publication of timely and useful news and information. Aside from the Weekly News Notes which we publish, we also send out two or three times per week special articles prepared for the papers of the state.

Besides the newspaper publicity, the Extension Service publishes printed bulletins, circulars, and information cards, these are sent out to the farmers free of cost upon request. We also publish "The Carolina Club Boy", a monthly paper which goes to boys who are members of the corn, pig, and other clubs. "The Extension Dairyman" is a monthly sheet which goes directly to farmers of the state particularly interested in dairying.

EXPENDITURES BY PROJECTS

| No. | Project | Total Expenditures | Smith-L. State | Smith-L. Federal | Funds U. S. D. A. | Funds County | Funds Misc. |
|---------------------|----------------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------|
| 1. | Administration | \$ 30,415.11 | \$ 437.50 | \$ 28,777.61 | \$ 1,200.00 | \$ | \$ |
| 2. | Printing & Dist. Pub. | 7,653.99 | 6,364.45 | 1,289.54 | ..... | ..... | ..... |
| 3. | County Agents | 152,421.28 | 39,707.94 | 26,363.73 | 18,195.00 | 68,154.61 | ..... |
| 4. | Home Demonstration | 125,053.24 | 37,715.71 | 34,593.28 | 8,025.00 | 37,719.25 | 7000 |
| 5. | Negro Demonstration | 14,316.78 | 10,836.78 | ..... | 3,480.00 | ..... | ..... |
| 6. | Live Stock | 8,692.74 | ..... | 8,692.74 | ..... | ..... | ..... |
| 7. | Dairy | 10,312.86 | ..... | 10,312.86 | ..... | ..... | ..... |
| 8. | Agronomy | 13,900.69 | ..... | 13,900.69 | ..... | ..... | ..... |
| 9. | Horticulture | 8,776.78 | 8,776.78 | ..... | ..... | ..... | ..... |
| 10. | Poultry | 8,776.08 | ..... | 5,713.08 | ..... | ..... | ..... |
| 11. | Marketing | 15,770.65 | 937.50 | 14,833.15 | ..... | ..... | ..... |
| 12. | Entomology | 4,812.41 | ..... | 4,812.41 | ..... | ..... | ..... |
| 13. | Botany, Plant Path. | 4,258.61 | 4,258.61 | ..... | ..... | ..... | ..... |
| 14. | Boys' Club Work | 8,294.40 | 369.00 | 6,725.40 | 1,200.00 | ..... | ..... |
| 16. | Credit U. & M. Ins. | 1,458.58 | 1,458.58 | ..... | ..... | ..... | ..... |
| TOTALS | | \$411,851.20 | \$110,862.85 | \$156,014.49 | \$32,100.00 | \$105,873.86 | \$7000 |

PERSONNEL EXTENSION SERVICE—1923-1924**A—Administrative Officers**

| Title | Name | Extension Salary | State Smith-Lever | Federal Smith-Lever | U. S. D. A. Fund |
|---------------------------------|----------------------|------------------|-------------------|---------------------|------------------|
| 1. Director of Extension | W. W. Long..... | \$4,750.00 | \$ | \$4150.00 | \$600.00 |
| 2. Assistant Dir. Ext..... | D. W. Watkins..... | 3,500.00 | ..... | 2,900.00 | 600.00 |
| 3. District Agent | A. A. McKeown | 3,000.00 | ..... | 2,400.00 | 600.00 |
| 4. District Agent | A. H. Ward | 3,250.00 | ..... | 2,650.00 | 600.00 |
| 5. District Agent | T. B. Young | 3,000.00 | ..... | 2,400.00 | 600.00 |
| 6. Chief of Horticulture..... | C. C. Newman | 1,000.00* | 1,000.00 | ..... | ..... |
| 7. Chief of Agronomy..... | C. P. Blackwell..... | 1,066.66* | ..... | 1,066.66 | ..... |
| 8. Chief of Entomology..... | A. F. Conrad..... | 1,000.00* | ..... | 1,000.00 | ..... |
| 9. Chief of Dairying..... | J. P. LaMaster..... | 1,066.66* | ..... | 1,066.66 | ..... |
| 10. Chief of Animal Husb..... | L. V. Starkey..... | 1,066.66* | ..... | 1,066.66 | ..... |
| 12. Agricultural Editor..... | A. B. Bryan..... | 2,750.00* | ..... | 2,750.00 | ..... |
| 13. Asst. Agr. Editor..... | J. L. Merritt..... | 2,500.00 | ..... | 1,900.00 | 600.00 |
| 14. State Agt. Boys' C. Work .. | B. O. Williams..... | 1,800.00 | ..... | 1,800.00 | ..... |
| 15. Asst. Agt. B. C. Work | I. D. Lewis..... | 2,450.00 | ..... | 1,850.00 | 600.00 |

*Receive additional salary from college and experiment station.

FUNDS FOR EXTENSION WORK FROM ALL SOURCES**FISCAL YEAR ENDING JUNE 30, 1924**

| | |
|--|--------------|
| 1. State appropriation (State Smith-Lever) | \$110,862.85 |
| 2. Federal Smith-Lever appropriation | 156,014.49 |
| 3. County funds | 105,873.86 |
| 4. U. S. Department of Agriculture funds..... | 32,100.00 |
| 5. Miscellaneous funds | 7,000.00 |

Total Resources\$411,851.20*

*Of the above total \$125,053.24 was expended for Home Demonstration work and work in cities under the general supervision of Miss Lonny I. Landrum.

B.—SPECIALISTS

A. L. DuRant, Live Stock Specialist
 L. H. McKay, Live Stock Specialist
 W. J. Keegan, Dairy Husbandman
 C. G. Cushman, Agent in Dairying
 J. L. Carberry, Agronomist
 S. L. Jeffords, Forage Crop Specialist
 R. W. Hamilton, Soybean, Peanut and Cowpea Specialist
 A. E. Schilletter, Extension Horticulturist
 E. H. Rawl, Asst. Extension Horticulturist
 D. H. Hall, Poultry Husbandman
 L. H. Lewis, Agent in Marketing
 D. D. Whitcomb, Packing and Grading Specialist
 C. A. Owens, Packing and Grading Socialist
 E. S. Prevost, Bee Specialist
 W. D. Moore, Asst. Pathologist

C.—COUNTY AGENTS

| Name | County |
|----------------------|--------------|
| C. S. Addy | Lexington |
| O. E. Baker | Marion |
| C. L. Baxter | Williamsburg |
| T. A. Bowen | Pickens |
| H. G. Boylston | Barnwell |
| ..... | Bamberg |
| S. M. Byars | Anderson |
| Earnest Carnes | Spartanburg |
| T. M. Cathcart | Dorchester |
| ..... | Edgefield |
| J. R. Clark | Richland |
| J. M. Eleazer | Sumter |
| ..... | Horry |
| S. W. Epps | Dillon |
| Rudolph Farmer | Oconee |
| C. Lee Gowan | Aiken |
| W. F. Gray | Greenville |
| E. P. Gullett | Greenwood |
| ..... | Jasper |
| J. H. Harvey | Berkeley |
| Wm. F. Howell | Lancaster |
| L. W. Johnson | York |
| H. M. Kinsey | Colleton |
| R. H. Lemmon | Fairfield |
| C. L. McCaslan | Calhoun |
| M. M. McCord | Georgetown |
| G. C. McDermid | Charleston |
| J. W. McLendon | Florence |
| J. C. Miller | Orangeburg |
| T. W. Morgan | McCormick |
| T. M. Mills | Newberry |
| J. M. Napier | Darlington |
| J. P. Quinerly | Lee |

SUPPLEMENTARY REPORTS

| | |
|-----------------------|--------------|
| F. M. Rast | Clarendon |
| Z. D. Robertson | Allendale |
| ..... | Abbeville |
| Claude Rothell | Saluda |
| H. K. Sanders | Chester |
| J. W. Sanders | Kershaw |
| G. H. Stewart | Marlboro |
| S. C. Stribling | Cherokee |
| W. J. Tiller | Chesterfield |
| C. L. Vaughn | Laurens |
| W. D. Wood | Union |
| Gustavus York | Hampton |
| ..... | Beaufort |

D. CLERKS AND STENOGRAPHERS

| |
|---|
| E. B. Elmore, Bookkeeper* |
| S. W. Evans, Treasurer* |
| C. M. Hall, Chief Clerk and Accountant, |
| Rebecca Edmonds, Stenographer |
| Helen Herbert, Stenographer |
| Ruby Long, Stenographer |
| Mrs. H. S. Torrence, Agr. Librarian* |
| Roberta Wilson, Stenographer |
| Julia Hook, Mailing Clerk* |
| George Bratton, Stenographer* |
| Rosa Morrison, Stenographer |
| Marguerite Brownlee, Stenographer |
| Lila Bunch, Stenographer |
| Harriett V. Moore, Stenographer |
| Ella Norris, Stenographer |
| Lillian C. Thompson, Stenographer* |

* Receive additional salary from college and other sources.

LOCAL AGENTS

H. E. Daniels, Asst. Director.

| Name. | County |
|-------------------------|-------------|
| Benjamin Barnwell | Beaufort |
| W. C. Bunch | Spartanburg |
| G. C. Daniels | Orangeburg |
| S. C. Disher | Darlington |
| J. E. Dickson | Richland |
| W. B. Harrison | Anderson |
| W. H. Hilyard | Greenwood |
| E. D. Jenkins | Bamberg |
| Jason Maloney | Sumter |

E. HOME DEMONSTRATON AGENTS

This list of agents not shown for the reason they are working under immediate supervision of Winthrop College and names will appear in report of Winthrop College.

Respectfully submitted,

W. W. LONG, Director.

REPORT OF THE S. C. EXPERIMENT STATION

Acting President S. B. Earle,
Clemson College, South Carolina.

Dear Sir:

The following is a summary of the annual report of this station for the fiscal year ending June 30, 1924.—

If additional evidence of the value of agricultural research and experimentation were needed, one could find it on every side during 1924, for it is during periods of rapid economic change and during seasons unfavorable for crop growth that intelligent application of science to agriculture produces results which stand out in great contrast to the slipshod and unscientific methods followed by the careless and uninformed.

The season of 1924 was one of the most unfavorable for agriculture in general and for production of cotton and corn in particular that has been experienced in this section for many years. Only the good farmers who used sound judgment based on scientific principles succeeded in making fair crops, and in some cases the local conditions were such that even these failed to secure average yields.

The excessive rains during June and July prevented the cotton from setting an early crop and washed out much of the fertilizer applied before planting time. The dry season which followed cut short the fruiting season and caused the top crop to shed off and seriously interfered with the development of the corn, hay, and forage crops. Under these conditions good rotations which supplied ample organic matter to the soil, thorough preparation, proper fertilization, and sound cultural practices, coupled with wise use of side applications of fertilizer and judicious use of poisons for the weevil resulted in much increased yields. Side applications of nitrate of soda to cotton as late as July 15 proved very profitable on light soils this year where the successive rains had leached out the soluble nitrate which was put under the crop.

Such seasons emphasize again the need for a diversified agriculture. The production of crops requiring different seasonal conditions and maturing at different times increase the chances of success in that the same conditions will not usually affect such a variety of crops as small grain, potatoes, corn, cotton, tobacco, peanuts and sweet potatoes. It is a question of not having all of your eggs in one basket.

The recent rapid increase in the price paid for livestock and the recent advances in the price of feed together with economic factors involved in profitable production of poultry, milk, beef, and pork have caused our people to recast their plans for production of livestock and crops for another year. The variations in seasons and the changes in local and world supply of certain commodities result in a

change of the economic factors which determine the profit or loss in farm operations, and we are fortunate at times like these to have a background of years of experimentation and research upon which to base our plans for meeting the new situations that develop. In some cases the exact scientific knowledge needed for most rapid progress is lacking on account of insufficient funds and facilities to enable our research institutions to go forward with the many problems needing solution, but in the main there is sufficient scientific background to furnish a foundation upon which to build.

The research workers of this institution have striven ~~zealously~~ zealously to meet the emergencies as they have developed and we have under way investigations along many lines which are yielding results of importance in our agricultural development. Much progress has been made along almost all lines. A short summary of the accomplishments of the year and progress reports of the more important projects are given below. A list of the problems now being investigated will be found at the end of this report.

THE BOLL WEEVIL PROBLEM

Considerable progress has been made during the past few years in developing a diversified agriculture. This has been particularly true in sections of the state which are adapted to the production of vegetables, truck and fruit, and in areas where peanuts, tobacco, and sweet potatoes can be grown at a profit. In spite of the efforts in these directions, however, cotton remains our principal money crop. In 1923, 40 percent of the cultivated acreage in South Carolina was planted to cotton, and 56 percent of our crop values was produced by cotton. It is estimated that the 1923 crop, including the seed, brought in \$133,000,000 to South Carolina farmers. This was 49 percent of the total value of **all** the agricultural products of the state. The economic production of cotton continues, therefore, to be the biggest agricultural problem in this state and the boll weevil is the most important single factor we have to contend with in cotton production.

As set forth in our last annual report, our boll weevil control project, which was undertaken two years ago in cooperation with the United States Department of Agriculture, was organized with the feeling that the intensive application of scientific methods of investigation to cotton production would eventually furnish the foundation for more profitable practices in producing this important crop. The results secured during 1923 encouraged us to feel that we were working along the right line and the station has continued to make cotton research its main project.

The work at Clemson has been continued along the same general lines as indicated in the last report and has been participated in by Messrs. C. O. Eddy and C. B. Nickels, of the Division of Entomology; C. P. Blackwell and T. S. Buie, of the Agronomy Division; and C. A

Ludwig, of the Division of Botany and Plant Pathology, together with several student assistants employed during the summer. The work away from Clemson continues to be centered in the Division of Boll Weevil Control with headquarters at the Pee Dee Experiment Station, in Florence.

The form of organization at Florence remains the same but there have been some important changes in the personnel. Dr. N. E. Winters, who was head of the division and in the joint employ of the College and the Bureau of Entomology, resigned effective January 31, and went to the Argentine Republic in the employ of the Department of Agriculture of that government for the purpose of aiding in the development of a cotton industry there. Dr. George M. Armstrong, a native of this state, but recently of Washington University and Shaw Botanical Gardens of St. Louis, Mo., was secured to succeed Dr. Winters as head of the division. Messrs. V. V. Williams and H. C. Young were transferred back to Tallulah, La., by the Bureau of Entomology to continue their work there, and Dr. F. A. Fenton and Mr. E. W. Dunnam were employed by the Bureau of Entomology to take up important biological investigations which has been planned at the outset but which we were not able to begin last season.

Direct Methods of Weevil Control

The toxicity work with poisons in cage tests which formed an important part of the work at Florence last season was moved back to Tallulah because the funds available were not sufficient to continue this on the scale which it was planned in the first place, and because much better opportunity exists at Tallulah for this work on account of the better laboratory facilities and the longer growing seasons. We felt that it was not necessary to duplicate work of this kind and that the results secured at Tallulah would be applicable over the entire cotton belt. Therefore, we did not conduct at Florence any cage or small plat tests with any of the patent preparations or commercial mixtures which were being offered as poison for the weevil. We did, however, on account of the local interest in question, use Bruce's Boll Weevil Exterminator in some of our field work but this was found to be no more effective than the home mixture of calcium arsenate and molasses.

Biological and Life History Work at Florence

When this project was first planned in cooperation with the Bureau of Entomology it was aimed to undertake detail biological and life history studies of the weevil, both in the field and in the insectary, so as to check up on similar studies which had been made in different parts of the South. In this way it could be determined whether or not the different climatic conditions which exist in the eastern part of the cotton belt had changed in any way the important periods in the life history and development of the weevil. The funds available

last year were not sufficient to undertake this work and to conduct the poison work on as large a scale as seemed necessary, so it was postponed until the spring of 1924. At this time Dr. Fenton and Mr. Dunnam took up the work and have, with the assistance of four temporary assistants during the summer, made very comprehensive investigations along this line for the entire season. While the total data have not yet been worked up sufficiently to draw definite conclusions from the work, there are some outstanding facts which might be mentioned here.

The hibernation work during the winter of 1923-24 in which 21,617 weevils were placed in hibernation showed that only .02 percent of the weevils that we put in hibernation the 8th of September survived. Of those we put in hibernation between October 1 and 15, only .19 percent survived. Of those that we put in hibernation between October 16 and 31, .59 percent survived, and of those that we put in hibernation between the 1st and 13th of November, 2.45 percent survived. This indicates quite clearly the influence of time of beginning of hibernation on survival and indicates that stalk destruction which would remove the food supply and cause the weevils to go into hibernation early would prove a big handicap to the weevils and cause almost all of them to die before the following spring.

The late summer migration began this year on August 24. Great numbers of weevils were in flight August 26 and 27. At this time cotton in the vicinity of Florence was already beginning to open and squares were shedding quite generally on account of dry weather. There was considerable damage, however, after this to young bolls.

Dr. Fenton also devoted some attention to parasites of the boll weevil during this summer. This work was conducted on a comparatively intensive scale by collecting punctured squares in different fields at certain intervals and placing these in breeding cages. It was found that the weevil was attacked by three important species of parasites. In addition to these, two less common species were bred, but possibly some of these are secondary. In general the percentage of parasites was greater in squares hanging on the plants than those that had fallen to the ground. Parasites were found to be more abundant in certain fields than in others and this condition increased as the season advanced.

Field Tests With Poisons

When this cooperative work was organized there were many proprietary mixtures and home remedies being widely recommended to our farmers as sure cures for the boll weevil. While we had recommended only those poisons which accurate scientific investigation and demonstration had proven effective, we were especially anxious to learn the comparative value of the more promising of these poisons so that we could give our people more definite information as to the most efficient means of weevil control. The

testing of these poisons, therefore, constituted our largest task during 1923. Over 250 individual field plants were used and the work was conducted in 14 counties in the state. The season was unfavorable for weevil increase in many sections, so that the results were not always clear cut, but at the end of the season when all of the results were brought together and studied in the light of the detail observations as to seasonal factors and weevil behavior at each place, and the results compared with similar experiments conducted in the states south of us and carefully analyzed by a committee representing all of the experiment stations and the more progressive farmers of the south, it was clearly evident that great progress had been made in settling the poison controversy which had been under way for several years. In our own experiments, as well as tests at other points in this and other states, the results showed that when applied to the plants early in the season before square formation becomes general, the various liquid poisons that contain sufficient arsenic will kill the boll weevil just as effectively as calcium arsenate dust, but after the cotton begins to bloom the only poison found effective was calcium arsenate put on in the dust form.

The leading farmers all over the south as well as the scientists and agricultural leaders, are now agreed on this, and our farmers are thereby saved thousands of dollars not only in the additional yields secured by more effective poisoning but also by saving the enormous sums previously expended for less effective and in many cases worthless poisons and nostrums. This work was reported at some length in our last annual report and in circular No. 31 of this station.

During the present season (1924) we have continued our field plat work with poisons on a smaller scale than last year, but largely with a view of determining the comparative effectiveness of early season and late season poisoning, and the comparative value of several new poisons. Separate series of experiments have been conducted in twenty-seven different fields in Florence, Darlington, and Clarendon counties and on eight different farms in Anderson, Oconee and Pickens counties.

While much progress has been made during these two years in determining the best poison to use in fighting the weevil and we have practically settled this point so far as the poisons now in use are concerned, the question as to the best time to apply poison and the minimum number of applications that might produce the maximum profit is still unsettled. To what extent will early applications take place of later season poisoning? and, is it possible to make a reasonably abundant crop the average season with early applications alone? These are some of the important questions still unanswered so far as South Carolina conditions are concerned.

Our experiments were planned to throw additional light on these questions but the data secured are still conflicting and not sufficient to give definite conclusions. This question is so closely tied up with weather conditions and weevil abundance in the field that experiments will have to be continued over a period of years before the matter can be definitely settled.

Laboratory and Field Studies With Poisons at Clemson

The experiments begun during 1923 by Professor Conard with nicotine as a poison for the boll weevil have been continued by Mr. C. O. Eddy and Mr. C. B. Nickels, and while the results have not proved as encouraging as we had hoped, many facts have been brought out which will be of value in developing poisons for other insects and possibly for boll weevil control. The problem has been attacked from a fundamental standpoint and besides determining the relative toxicity of nicotine as a stomach poison when mixed with different fillers, the physical and chemical properties of such materials as Tripoli, Bentonite, Fuller's Earth, Filtercel, etc. have been studied as carriers of nicotine. Mr. Eddy also tested several other poisons and proprietary mixtures in the laboratory and with weevils in cages in the field during the summer, but was unable to make as complete tests as we had planned because of the scarcity of weevils. Much of this work was done with weevils shipped here from Florence.

During the latter part of the season arrangements were made with the Chemical Warfare Service for some cooperative studies with gases and other poisons and two chemists of the War Department were stationed at Clemson for this purpose. Those investigations were of a fundamental nature and were undertaken with a view of determining whether or not it might be possible to apply some of the practices developed in gas warfare to boll weevil control. No results of these studies can be announced at this time but it is hoped that this cooperative effort can be continued until a better and more effective method of controlling this destructive pest is found.

Indirect Methods of Weevil Control

When the boll weevil work was initiated we realized that it is as important to **make** a crop of cotton as it is to **save** it after it is made, and in studying the situation as it stood then we were impressed with the fact that there was a lack of accurate data regarding the reaction of the cotton plant to weevil attack and a lack of definite information as to the factors influencing rapid growth and development of the cotton plant. It seems that the investigators in the past have been more interested in the weevil and its behaviour than they have in the reaction of the plant to weevil attack or the behavior of the plant itself under different physical and biological conditions.

Evidently one way to get ahead of the weevil is to produce a crop of cotton as rapidly as possible during the period when weevils are not very abundant in the fields. During the several years that we have been conducting experiments and making careful observations along this line we have observed that overwintered weevils are seldom abundant enough to cause serious damage to our crops. These must lay eggs in the first squares and produce a new generation of weevils, and frequently a second generation, before they become numerous enough to destroy the crop. It takes about 28 days after the first squares are big enough to puncture before the first generation of new weevils are mature and ready to lay eggs. It takes about the same length of time under average conditions after the first generation appears before the second generation begins to puncture squares. There is evidently then an early period of from 55 to 60 days during the average season when weevils are not numerous enough in the fields to destroy a very large share of the crop. If it is possible therefore to produce a crop of cotton in two months to the point where the bolls are sufficiently mature that they are immune to weevil attack it would seem that it would be possible to make a reasonably abundant crop of cotton without serious loss from boll weevils.

We have been working along this line now for two years and have a great deal of very interesting data bearing upon the rapid growth and early fruiting of cotton. The following are some of the factors that we have been studying in this connection: spacing of the plants in the row and width of row; fertilizers—kinds, amounts, and time of application; cultural practices; varieties; seed treatment; time of planting; pruning in different ways; and different methods of topping. Much of this work has been conducted at Clemson by the Divisions of Botany and Agronomy, and work along all of these lines has been under way for two years at Florence by the Division of Boll Weevil Control. The results secured the first year were referred to in the last annual report and in a few cases were given more in detail in circular No. 31 published in January, 1924. Many of these investigations are yielding data that are exceedingly interesting and seem to be very important from a standpoint of producing an early crop.

It will be recalled that last year the cotton which was not thinned set fruit more rapidly early in the season than any of the spacings which were used and that the 6, 9, and 12 inch spacings produced approximately the same yield. This past season has been very different from that which obtained in 1923. The continuous rains during June and first part of July kept the soil saturated and prevented the cotton from being cultivated at all. During this period there was practically no fruit set on

any of the plants. When fruiting began following this practically all spacings set fruit with about the same rapidity, so that there was little increase in earliness this year from thick spacing. In fact the highest percentage of the total yield secured at the first picking came from the rows which had one stalk every 12 inches. This plat also produced the highest total yield. The ones coming next in order were 9 inch spacing, 16 inch spacing, and 6 inch spacing.

In the tests at Clemson the closely spaced cotton continues to give the highest yield and the earliest crop, the 8 inch spacing in 3½ foot rows giving the highest yield.

In tests at Florence where we have planted 1, 2, 3, and 4 stalks per hill at 12, 18, and 24 inch spacings, one stalk every 12 inches gave the highest yield and the earliest crop. At 18 inches two stalks per hill gave the highest yield. At 24 inches three stalks per hill gave the highest yield.

The seed treatment tests at Florence and at Clemson were conducted along the same lines as reported last year. Comparisons were made with seed delinted with sulphuric acid, seed rolled in soda, seed delinted at the oil mill, and normal seed as they come from the gin. The results this year were practically the same as those reported last year, that is, the delinted seed produced a higher yield as well as a crop which was earlier and freer from disease.

We have continued to study the effect of fertilizer on earliness and the results for this season check very closely with those of last year in that the fertilizer which promote most rapid growth results in the most rapid fruiting of the plants. A complete fertilizer in each case has given the most rapid fruiting and the earliest maturity. A liberal amount of nitrogen in the fertilizer is necessary to get rapid growth and early fruiting. The same is true of phosphorus. Our best yields and earliest cotton have been produced this season, as heretofore, where we used six to eight hundred pounds of fertilizer analyzing 5 to 6 per cent nitrogen and 8 per cent of phosphoric acid.

Tests of time of applying soda indicate that side applications are most profitable. The tests made thus far indicate that the best time to make side applications is immediately after the cotton is chopped. This season in some of our work we obtained evidence indicating that much later applications of soda were beneficial. This was due however to the fact that excessive rains leached out a considerable portion of the soluble nitrogen of the soil and later applications were necessary in order to provide sufficient quantity of this element to promote rapid growth.

As reported in our last annual report, we have for some years been making careful observations on the fruiting and development

of the varieties of cotton used in our variety tests, and have especially noted the time at which the varieties begin blooming and the time at which the first bolls open, and the yields at the first and second pickings. In addition to these observations, we began in 1922 to make careful counts on a limited number of plants in each variety to determine accurately the rapidity of fruiting and development, and since then have charted plants of each variety, giving a complete life history of the development of individual stalks of the more important varieties.

At Florence, where the first blooms were observed on June 22 the Lightning Express, College No. 1, Coker's Webber 49, and Humco Webber 49 began fruiting ahead of the other varieties. These same varieties, together with Humphrey-Coker Cleveland; J. E. Wanamaker Cleveland; Deltatype; Carolina Foster; and Coker Cleveland put on squares most rapidly during June and early July.

At Clemson, the varieties which started fruiting first were much the same as last year. Trice, Delfos, Lightning Express, Acala, King and Carolina Foster—but the most rapid square formation during the first month of the fruiting period was observed on strains of Cleveland, Lightning Express, Carolina Foster, College No. 1, and Acala.

Another very interesting and important varietal difference noted in our studies is the rapidity of the growth of the bolls during the early stages of development. We observed last year that Cleveland and Webber bolls became full sized in about 20 days after bloom but did not mature and open until four or five weeks later. The question naturally arises as to the rate at which the hull of the different varieties hardens up and becomes immune to weevil attack, and we have also continued our studies along this line.

There was a condition general in the cotton fields in all sections of the state this season that has not been observed before during the seventeen years we have been studying cotton. This was the abortion or shedding of the very small buds and squares which were formed when the plants first began to square in the early summer. The tiny buds would turn brown, dry up and drop off, leaving the lower branches devoid of squares and bolls. This failure to set a bottom crop was the main cause for the short cotton crop this season.

This abortion of early buds and squares was evidently connected in some way with the unusually rainy season, but there were certain conditions which indicate that it was not entirely due to this. In many fields where this condition was general stalks could be found that were fruited normally in every respect. This suggests that there were other contributing causes. The cotton flea which is discussed later in this report, might have caused some

of this shedding but could not have caused all of it because the trouble was general in many fields where the cotton flea was not abundant.

There is some reason to believe that this very serious interference with the normal fruiting of cotton might be caused by a disturbance of the nutritive balance of the plant, and it therefore seems worth while to undertake a serious investigation of it. We plan to build a greenhouse and equip a physiological laboratory at Florence for this purpose. Dr. Armstrong, on account of his thorough training in physiology and chemistry and his experience in research work of this kind, is peculiarly fitted to undertake this investigation.

Experiments With Crops

By far the most important Agricultural enterprise of this state is the production of field crops. In 1923 the value of the fifteen leading field crops in the state of South Carolina was \$224,564,000, or approximately a quarter billion dollars. More than half of this wealth was produced by the cotton crop alone. Corn still holds second place in money value and in acreage occupied and tobacco is third in money value. The exact value of the 1924 crop is not known as yet, but there is no doubt but that the cotton crop will have a lower total value than the 1923 crop. The yield for the state is somewhat lower and the price is also lower. Cotton is still the great wealth producing crop of the state.

The Agronomy Division is conducting many investigations along the line of factors in economical crop production, plant breeding, soil fertility, fertilizers, cultural practices, seed treatment, variety tests, rotations, new plant introductions, factors affecting oil content of seeds, cause of barrenness in corn, and fruiting studies with cotton. These investigations are conducted on the main station at Clemson College, the Pee Dee Station at Florence, the Coast Experiment Station at Summerville, and in cooperation with progressive farmers throughout the state.

The Experiment Station believes that the investigations referred to above have already resulted in great value to the state. Proof of this is found in the fact that a comparison between the average yield of field crops for the 20 year period just prior to the establishment of the South Carolina Experiment Station and the average yield of the same crops for the past 10 years shows that there has been an increase of 80 per cent. In 1923 this would mean a gain in the value of our leading field crops of approximately \$100,000,000. From this should be subtracted the cost of fertilizing, harvesting and marketing this increase in yield in order to get the net value of the increase. After deducting

all these costs there is a net gain of about \$70,000,000. Of course it is not claimed that the Experiment Station deserves credit for all this or even most of it. Much of the credit for this is due to the Extension work of Clemson College, and to progressive farmers, plant breeders, and business men of the state. It is claimed, however, that the Experiment Station deserves credit for developing many of the facts about crop production and the underlying principles which have made the work of the above named men and organizations possible. In developing the fundamental principles of scientific crop production the Experiment Station deserves credit for a large part of the wealth produced through the increased yield of crops. It may also be pointed out that this is a source of wealth which is increasing steadily and not just a result which we have for one year and which may never come again; in other words, it is a constantly recurring source of profits.

Cotton variety tests are conducted at Clemson College and at the sub-stations each year. We cannot take the results of the test for any one year as final, as they depend largely on the season. The best variety is the one having the highest money value as an average of a period of years.

The varieties having the highest money value at Clemson in 1923 were Clemson Cook, College No. 1, Acala and Cleveland, in the order named. It is too early to give the money value for 1924, but some of the varieties having the highest yield are Cook, King, Cleveland and Acala.

Forty varieties were included in the test this year. Twenty of the leading ones of these were used for a complete fruiting study, in order to determine their earliness and general fruiting habits.

At Florence the variety test was run in two series. One series was poisoned throughout the season to protect it against the boll weevil and the other series was poisoned with two early applications of sweetened poison. There are still a great many farmers in the state who do not protect their cotton against weevil attack throughout the season with poison, and we are making an effort to determine the best varieties for these to plant as well as the best variety for the ones who use poison throughout the season and try to save the crop after it is made and thus obtain maximum yields. On the poisoned section each of four strains of Cleveland produced over 2000 pounds per acre with Humphrey Coker Cleveland leading with 2092.

We published in March, 1924, the results of our cotton variety, fruiting, and fertilizer studies with cotton. These experiments covered a period of years and represent the work conducted at all of our stations and in cooperation with farmers in different sections of this state. This publication, Bulletin No. 219, is one

of the most valuable bulletins published by the station in recent years, and is sent free of charge to all citizens of the state who ask for it.

Corn variety tests are conducted at each of the stations each year. From 15 to 20 of the leading varieties of the state are included. The varieties having the highest average yield at Clemson College for the past four years are Douthit 42.5 bushels per acre, Hastings 39.7 Weekly's 38.7. The varieties having the highest average at Florence for the same time are Douthit, Pee Dee No. 5, and Coker's Garrick, each with a yield of 57 bushels per acre. During 1924, Chappel's Garrick led with 75.7 bushels and was followed by Coker's Garrick with 70.2 bushels and Pee Dee No. 5 with 70.1 bushels. At the Coast Station for the same time the leading varieties have been Hasting's Douthit's and Weekly's, and for 1924 Hasting's, Douthit's, and Pee Dee No. 5.

Alabama Blue stem wheat, Wood's bearded barley, Coker's Abruzzi rye, and Black winter oats gave the highest yields in our small grain variety tests for 1924.

The breeding work with cotton, corn, rye, and barley is being continued at Clemson and the cotton and velvet bean breeding work is being continued at the Pee Dee Station.

Fertilizer Studies

South Carolina uses more fertilizer per acre on general field crops than does any other state, and the thoughtful farmer should, therefore, use extreme care in selecting the formula best suited to his particular soil and crop. Due to the great diversity of soil types throughout the state, it is necessary, if reliable information as to the needs of the soils is to be obtained, that fertilizer tests be conducted on as many representative soil types as possible. Several years ago in an effort to obtain this much needed information, extensive fertilizer experiments were begun in cooperation with individual farmers in different sections of the state. Probably more farmers come in contact with these cooperative fertilizer experiments of the Agronomy Division than with any other one phase of Experiment Station work. Several additional tests have been added as facilities permitted, including one at Laurens the past season, until at present there are nine complete tests in as many counties of the state.

These experiments, while having been run for only a few years, show clearly the great need of South Carolina soils for nitrogen, this element giving greatest returns of all. After the need for nitrogen has been met, phosphorus becomes the next limiting factor of plant growth. Potash appears not to be necessary as the other two elements, although ordnarliy it gives incrsaed yields, especially of cotton. This is shown by the average

of the results secured with cotton for the past four years, which are as follows: where no fertilizer was used the average yield was 512 pounds seed cotton; where phosphorus and potash alone were used the yield was 666 pounds; where nitrogen and potash were used, 878 pounds; where nitrogen, phosphorus, and potash were used, the yield was 1040 pounds seed cotton per acre.

In the case of corn also the response to nitrogenous fertilizers is much greater than to any other fertilizing element, in fact the yields of corn have been found to be in almost direct proportion to the amount of ammonia applied. Where the amount of ammonia in a complete fertilizer was varied, the other elements being kept constant in tests at eight different places in the state, no ammonia produced 21.7 bushels of corn, 2 percent ammonia produced 25.4 bushels, 4 percent 29.2 bushels, 8 percent ammonia 37.5 bushels. Each successive addition of ammonia to the formula, it will be noted, resulted in an increased yield of corn, this increase being in almost direct proportion to the amount of ammonia in the formula.

In addition to the regular fertilizer tests conducted in cooperation with individual farmers of the state, other experiments with special crops are conducted from time to time. During the past season tests to determine the best formula to use for peanuts have been conducted at Columbia, Aiken, and Darlington.

The most important indications from this experiment are: that a complete fertilizer is necessary for best results, that 600 pounds of fertilizer gave a greater profit per acre than either 200 or 400 pounds, and that the percentage of each element giving best results, if expressed as a formula, would be about 10 percent phosphorus acid, 2 to 3 percent ammonia and about 6 percent potash.

Interesting and valuable experiments with fertilizers with sweet potatoes, peanuts, Irish potatoes, and other crops are under way at Florence and Summerville and reference to these will be found under the sections of the report dealing with these stations.

Research Work In Agricultural Economics

Realizing that many of our cropping systems and farm practices, which seem best for the individual crop and for present conditions, are unsound and uneconomical from the standpoint of our permanent agricultural advancement, we have for several years kept accurate records of all of the operations and costs involved in producing the crops in the different fields on the Experiment Station farms. A careful study of these records from year to year has shown the excessive costs and poor economy of certain practices, and has indicated methods by which improvements could be made and cost of production lowered.

During 1922, we took up with the Bureau of Agricultural Economics of the United States Department of Agriculture the matter of cooperative work along this line and finally perfected an arrangement by which such work could be undertaken jointly by the Department and the College, each paying half of the cost. Early in 1923, Mr. W. C. Jensen, who was formerly employed here as assistant in Agricultural Economics, and who was pursuing graduate study along this line at the University of Wisconsin, came back and took up this work.

The object of this broad investigation which we have under way now is to study the economic factors involved in the operation and management of cotton farms with a view of obtaining fundamental facts and figures upon which to base recommendations as to the proper organization of the farm under boll weevil conditions. This survey has been pursued thus far by Mr. Jensen and two assistants. In Anderson county records were obtained on 333 farms for the crop year 1922. In the surveys the field men use a twenty-one page outline in recording the data from each farm. This includes the farmer's records and estimates of the amount and cost of men, horse, and implement labor involved in the production of each crop under the wages, tenant, and share-crop systems, and gives a business analysis of each crop and division of the farm as a unit of operation. A careful and complete business analysis is also made of the entire farm, so that we not only know the profit or loss of the individual operations and crops, but the profit or loss on the farm as a whole.

The data secured in this survey have been published as bulletin No. 221 of this station.

This work has been continued on these same farms in Anderson county for the crop year 1923, and will be continued for several years longer omitting, of course, any farms which change management or organization in such way as to prevent the later results from being comparable with those secured in the earlier surveys.

Besides these intensive studies year after year on the same farms in Anderson county we have formed a cooperative agreement with the State Department of Education by which many of the Smith-Hughes teachers of Agriculture in the rural high schools of the state are taking the same kind of records on farms in the sections where they teach. Mr. Jensen is assisting each of these teachers in organizing this work and supervising it in a general way, and we are working up the results in the office here and sending them back to the teachers for use in working up the projects in their schools.

This is a splendid type of cooperative work and not only provides the teachers new and timely data and subject matter for their teaching, but enables the research workers to cover the

entire state with funds that would only provide for the work in one or two counties. The work of both parties cooperating is strengthened and the state at large profits by the arrangement.

Insect Pests

Insects attack all kinds of crops and plants and in many cases the damage which they cause to our crops makes the difference between success and failure. The question is often asked why do we have so many more pests now than we formerly had? When we realize, however, that seventy-five percent of the injurious insects that we have to contend with have come in from other countries, it is easy to answer this question. In fact our most destructive pests are the ones that have been imported from other places. The San Jose scale, the common potato bug, and the boll weevil are conspicuous examples.

Our entomologists are not only charged with investigating these pests and developing means of controlling them, but they have the responsibility of enforcing quarantine measures and keeping other and more destructive pests from being brought into the state.

The control of almost all insect pests involves the use of poisons which will destroy the pest without injuring the plant or animal upon which it is living. As chemical and physical science advance new substances are being produced which seem to have possibilities as insecticides. In many cases the pests we must fight are peculiar to this section of the country, in other cases the climatic conditions which obtain here cause both plants and their pests to react in a different manner than is the case in colder and dryer climates. So we not only have to devise control methods where none are known, but in the case of insects peculiar to our section, have to carefully test out and frequently modify insecticides and methods developed elsewhere before we can recommend them to our people as being safe and effective.

During the past year an up-to-date insecticide laboratory was organized and equipped for the production and study of both dry and liquid insecticides. This work is being pursued along the following general lines: (1) The study of insecticides in common use; (2) Investigations of new insecticides; and (3) The investigation of new insecticide combinations.

The Mexican Bean Beetle

A new pest for South Carolina is the Mexican Bean Beetle which is proving very destructive to the bean crop in the Piedmont section of the state. In many places during the past spring and summer the beans, especially garden varieties, were completely destroyed by this pest.

In our experiments with this pest during the past year encouraging results were obtained with magnesium arsenate mixed with

three to five parts of hydrated lime and with calcium arsenate mixed with nine parts of hydrated lime and applied as a dust. Two liquid sprays, one containing two pounds of magnesium arsenate to one hundred gallons water, and the other, one and one-half pounds of calcium arsenate, and three pounds of hydrated lime to one hundred gallons of water also gave good results.

Plant Diseases

The Botany Division continues to investigate diseases of plants which are prevalent and destructive in this state. The main research projects continue to be with cotton diseases, but other important diseases come up from time to time and investigations of these are undertaken where the malady is serious enough to justify a serious study of it. Millions of dollars are lost annually to South Carolina farmers on account of the destructive diseases of small grain, corn, cotton, fruits, and vegetables.

The annual plant disease survey conducted in cooperation with the Bureau of Plant Industry, of the United States Department of Agriculture, has been carried out as in the past. This survey serves a most useful purpose in keeping the college, experiment station, and extension workers in touch with plant disease conditions throughout the state. It enables us to correlate our research work on plant disease more closely with the needs of our farmers. During the past year, two new diseases have made their appearance in the state. One of these, a cotton disease known as *Ascachyta* caker, made its appearance during the rainy weather of June and July, and was found in Lexington, Greenville, and Oconee counties. This disease was formerly discovered and described in Arkansas and this year is apparently the first time it has made serious inroads into the cotton fields of South Carolina, and if it continues to occur here on large areas it will be necessary for us to undertake some investigational work looking to its control.

Another destructive cotton disease which seems never to have been reported previously was found a few miles from the college in Oconee during the summer. It is not known how serious this disease may prove as we have not yet determined definitely what the cause of it is.

The nematode disease of wheat which has been known in this country for several years, but has never been found in South Carolina before, was discovered in Oconee county in May of this year. On the farm where it was found it had completely destroyed a small field of grain. A survey of the neighborhood in cooperation with the United State Plant Disease Survey revealed the presence of the disease on several other farms in the neighborhood. In some cases the destruction amounted to 50 percent of

the crop and in others there were smaller proportions destroyed. This disease has caused very serious loss in other states, especially Virginia, but it is comparatively easy to control where proper precautionary measures are taken.

Experiments With Fruits and Vegetables

Varied soil and climatic conditions of South Carolina permit the growth of a great variety of fruits and vegetables during practically all seasons of the year. Our progressive people have appreciated the possibilities of developing the home orchard and garden, and have made these yield abundant returns of fruit and vegetables for home use and for the local markets, but it is just within the past few years that the production of these crops on a commercial scale for the eastern markets has been undertaken.

With the increased interest in fruit and vegetable growing and the consequent increase in the acreage devoted to these crops there comes an increased responsibility to the South Carolina Experiment Station. It is our purpose to keep abreast of these developments so as to be in a position to advise farmers entering the field of fruit growing or trucking for the first time, and to assist the established grower in the adoption of the most modern practices and the most efficient methods. In addition to the usual lines of experimentation, we are constantly trying out new and promising plants introduced into this country by the Office of Seed and Plant Introduction, of the United States Department of Agriculture, with a view of making important additions to our list of profitable crops.

We are continuing our variety and fertilizer test with fruits and vegetables, and in addition, we are conducting pruning tests of bunch grapes and source of seed test and breeding work with Irish potatoes. Our Bulletin No. 218, published in 1923, gives some interesting results obtained in a test comparing certified and non-certified Irish potato seed. This work shows very clearly the advantages to be derived from planting high grade seed.

Perhaps the most important work with fruits and vegetables is that being done in cooperation with farmers throughout the state. There are at present nine farmers cooperating with us in this work. These experiments cover such important projects as "Fertilizer tests with young peach trees," "Experiments on bearing peach trees," "Fertilizer tests on asparagus," "Source of seed test of Irish potatoes," and "Comparison of certified and non-certified Irish potato seed."

EXPERIMENTS WITH BEEF CATTLE, HOGS, AND SHEEP

With a diversified system of agriculture the farmers of the South are producing more and more feed crops. This increase in the production of such crops obviously calls for an increase in the number of

cattle, hogs, and sheep to consume them. The breeders have interested themselves in the problem to the extent that they have usually produced enough livestock to utilize this surplus food.

With livestock assuming a more important role in our farming system, with common feeding stuffs reaching a higher level of prices, and with the increased production of comparatively new feeds, the Station is confronted with the problem of solving the feeding requirements of our cattle, hog, and sheep population, involving, as it does, some 189,000 head of beef cattle, 569,000 hogs, and 23,000 sheep.

The Station has already given to our farmers information which has resulted in the saving of many thousands of dollars in their annual feed bill. Many farmers have found livestock profitable by making use of the findings of this station on the liberal use of forage crops for sheep and swine; the use of velvet bean fields for wintering beef cattle, sheep, and hogs; balanced rations for all classes of livestock; and proper methods of feeding and management.

During the past year there has been a great increase in the sheep industry in this state, and farmers are realizing that sheep destroy weeds, survive on scanty pasture, require a small amount of grain, produce two money crops a year, and fit in well with a permanent system of agriculture. Both sheep and beef cattle can utilize to good advantage the millions of acres of land which at present are producing practically nothing, such as rough hillsides, cut-over pine lands, and bottom land which is subject to overflow.

Grazing and feeding experiments are now under way with hogs and sheep, and wintering experiments with sheep and beef cattle and some of the results of experiments already completed are given in the full report of the station which has already been issued in printed form.

EXPERIMENTS WITH DAIRY CATTLE

Dairying is rapidly taking first place in our livestock development. This is as it should be because there would seem to be a great future for the dairy industry in this section. The dairy cow produces a greater return for the feed consumed than does any other animal. The demand for dairy products can hardly be met by twice the number of cows we now have. The big problems to be solved by the research workers and practical dairymen are all grouped around increased production per cow, and the proper utilization of home-grown feeds, so as to cut down the cost of the grain ration.

We have experiments under way testing different methods of breeding cattle, coupled with official testing, as a means of increasing the production of the individual animal, and are conducting feeding tests to determine the comparative value of different feeds and the best rations for milk production.

The official testing of dairy cattle is one of the most important projects we are conducting at the present time.

Progress has been made with this work during the year and many previous records have been broken. There are 21 breeders in the state making advanced registry records. This is six more than last year, and indicates the increased interest which is being taken in this work.

The average of the 58 yearly records completed during the year by all three breeds is 11468.8 pounds of milk and 533.30 pounds of butter fat. The average of the records of the cows from each breed is greater this year than for any previous year since Advanced Registry record work was started in South Carolina. The Guernseys increased their average by 23.52 pounds of butter fat, the Jerseys by 155.00 pounds and the Holsteins by 47.6 pounds.

The average of all yearly butter fat records for the year is 54.42 pounds greater than last year and 98.3 pounds greater than two years ago.

In the Experiment Station herd 10 official records were made during the year. All of these produced more than 8000 pounds of milk and over 400 pounds of butter fat, the highest production being 18901 pounds of milk and 704 pounds of butter fat by a Jersey cow, Pogis Princess.

Our herds are also improving in quality as well as in production, as is shown by the following winnings at the 1924 State Fair:

Holstein—First prize, three-year old cow; second prize, Junior bull calf; second prize, produce of dam; third prize, get of sire; fourth prize, Senior yearling heifer, fourth prize, Senior heifer calf.

Guernseys—First prize, age cow; Senior Grand Champion, third prize, Junior yearling.

Jerseys—First prize, three-year old cow; second prize, Senior yearling; second prize, Junior yearling; second prize, Senior bull calf, second prize, Senior heifer calf; third prize, get of sire; and fourth prize, Senior yearling heifer.

THE PEE DEE EXPERIMENT STATION

The lands of the Pee Dee Experiment Station are typical of a large area of the section of our state lying between the lower Coastal Plain and the sand hills. The soil here is fine sandy loam and fairly uniform throughout. The land is level and is well suited for experimental work. The seasonal conditions are usually such that our records are comparable from year to year.

Located as it is in the center of the prosperous Pee Dee section of the state, this Station has proved an excellent place for headquarters for our Division of Boll Weevil Control. An office building of six rooms was constructed to accommodate the force of the Pee Dee Sta-

tion and the agronomists and entomologists and assistants working in the division of Boll Weevil Control. Much of the land and many of the facilities of this Station have been used during this season in the boll weevil control work. This has, of course, enabled us to make the maximum progress with the smallest possible expenditure of public funds, and thus has promoted efficiency and economy in this important line of research.

While the Pee Dee Station and the Boll Weevil Control Division are organized as separate units in the Department of Agricultural Research, they have cooperated so closely in this important undertaking that there has been no conflict and no lost motion. This has been due, of course, to the patriotic spirit and loyal devotion of the workers of these divisions to the institution and to their deep interest in the problems which we are attempting to solve.

The Boll Weevil Control work has already been discussed at some length at the beginning of the report.

The kind and number of projects conducted here this year have been changed but little from that of last year for the reason that all of the land available on the Station had been assigned to projects that were to be continued for two or more years. This being the case additional lands were rented on which to conduct some one-year experiments and for general cropping purposes. The experiments conducted here include nearly all of the crops indigenous to this state and the South, such as corn, cotton, sweet potatoes, Irish potatoes, peanuts, oats, velvet beans, soy beans, vetch, rye, and tobacco, and many kinds of crops grown in horticultural experiments, such as grapes, peaches, plums, strawberries, persimmons, apples, pears, and other small fruits and vegetables.

In keeping with the teaching and principles of good farming, it has been our policy to pay especial attention to thorough preparation of the land. The adverse seasonal conditions experienced this year leads us to conclude that thorough preparation was one of the main factors enabling us to produce crops far above that of the average farmer. It may be well to mention that another important factor in our satisfactory production was the proper use of nitrogen at the crucial period of plant growth. Profiting by past experiments conducted here, we were able to make a judicious application of nitrogen that overcame the harmful effect of excessive rains and consequent lack of culture.

Soil fertility and fertilizer studies continue to be one of our chief lines of investigation at this station. We now have 36 acres of land in this kind of work, much of this being divided into one-tenth acre plots, and all of it into plots less than one-half acre in size. Reference has been made in other sections of the report to data secured from these fertilizer tests conducted in connection with crop rotations. In these tests we are comparing all known combinations of

different fertilizing ingredients, and we are also making comparative tests of the value of different sources of plant food.

In addition to these studies, experiments are under way to determine the best method and time of applying fertilizer. Such fertilizer tests and soil fertility studies are being conducted with the following crops—corn, sweet potatoes, cotton, tobacco, peanuts, Irish potatoes, oats, and oats and vetch planted together. Taken as a whole this makes one of the most comprehensive fertilizer tests in this country. This is especially true with reference to the tests with corn cotton and oats. Many of these fertilizer tests have direct bearing on the indirect control of the boll weevil and the conclusion reached by a study of some of our tests as to the use of certain combinations of fertilizer under boll weevil conditions are now being put into practice by some of our best farmers with good results. Data covering these experiments for this year has been in a general way in the section of the report under fertilizers of field crops and vegetables, but a few of the outstanding results are mentioned here. With cotton the importance of phosphorous both as to yields and earliness was emphasized against this year's results. Where phosphorus was used in different proportions the yields and earliness were in direct ratio to the amount used up to 8 percent in a combination with 4 to 6 percent nitrogen and 2 to 4 per cent potash.

The effect of potash this year under cotton was more noticeable than usual. Where phosphorus and nitrogen was constant the yields were increased in proportion to the amount of potash used up to as much as 4 per cent.

The fact that nitrogen is the leading factor in cotton production from a fertilizer standpoint was again clearly shown by this year's data. This year late season applications of nitrate of soda have given unusually good returns. In some cases as much as 200 pounds increase in seed cotton were secured by applying 100 pounds of soda to cotton after the excessive rains had stopped in July. In places this made the difference between profit and loss on the crop.

The variety studies here have always received particular attention. All seeds planted in variety tests are obtained each year from reputable breeders. All tests are conducted according to improved methods and every effort is made to have influential factors uniform. Tests are being continued with cotton, corn, sweet potatoes, peanuts tobacco and soybeans.

Breeding work is being continued at this station with cotton corn, peanuts and velvet beans.

The cotton breeding work is being conducted by Mr. E. E. Hall of the Boll Weevil Control Division, and he is making considerable progress with certain strains of Cleveland that he is breeding for earliness and production. The best fruited cotton on the station this

season was found in some of the progeny rows and increase blocks of this cotton.

The production of Pee Dee No. 5, a distinct and well established variety of corn is one of the accomplishments of this station. This variety has outyielded all others in tests at several of the Southern experiment stations, and usually stands at the top in our own tests. This year it was third at this station and second in the test at the Coast Station. So far none of the reliable seedmen are handling this corn, so an increasing number of orders is received by us every year.

The velvet bean breeding work is developing a strain of beans which has great promise. The best selection of these has yielded as high as eighty bushels per acre. This work has gone far enough now so that the seed are being distributed among farmers in the Pee Dee section for trial and this year favorable comments were secured from those trying this variety for the first time.

The peanut breeding work is being continued in cooperation with the United States Bureau of Plant Industry along the same lines as previously reported. Selections are being made for yield, size of nut, oil content, uniformity, time of maturity, and other desirable qualities. Considerable variation has been observed in the oil content of different selections within the same variety and especial attention is being devoted now to developing strains of high oil content.

Our good yields of crops this year can be partly attributed to the amount of humus contained in our land. This humus content was obtained to a great extent by planting legumes and plowing under vegetable matter. The adverse seasons like those prevailing this year bring out the importance of the proper use of legumes in soil building. The project to demonstrate the comparative value of legumes as a source of nitrogen and a method of soil-building as compared to non-legumes and also forms of commercial nitrogen was continued this year.

On account of the oats being winter killed, our oat and vetch combination did not give as large a yield as last year, which was 5286 pounds of oats and vetch hay, and 2200 pounds of pea hay, making a total of 7607 pounds of dry hay per acre. This year only 3750 pounds of oats and vetch hay were made on the same acre, however, 2990 pounds of pea hay was made, making a total of 6740 pounds of feed per acre.

The fact that the boll weevil can be readily controlled by the methods of poisoning which are being worked out at this station was demonstrated with the general crop on this station this season. Mr. E. D. Kyzer, Research Assistant in charge of this work, by keeping close track of the infestation throughout the season and applying calcium arsenate dust as soon as infestation reached approximately 10 per cent, succeeded in keeping the weevil completely under control until several weeks after general migration had begun. As a result

of the boll weevil control measures instituted on the station, the cotton in the experimental plots produced good results, some of the best varieties in the variety tests yielding more than 2000 pounds of seed cotton per acre.

THE COAST EXPERIMENT STATION

The Coast Experiment Station is located on the cut-over pine lands of the lower coastal plain at Drainland, twenty-four miles northwest of Charleston, on the Southern Railway. There are over three million acres of cut-over land in South Carolina, and this sub-station was started in 1908 for the purpose of conducting experiments in reclaiming these lands and developing practices looking to their utilization for agricultural purposes. Some splendid results have been obtained from the experiments with field crops, fertilizers, fruits, and vegetables, and these have been published from time to time and have served to improve the agricultural practices in this section of the state.

Drainage is, of course, one of the big problems of this station and by studying the situation carefully from year to year we have worked out a system of drainage that works satisfactorily as long as the outlets continue to function. In cases of exceedingly heavy rains like we had during the summer of 1924, the whole region becomes flooded and the main outlet for our drainage system is covered. In such cases water stands on the land and crops are soon injured to such an extent that recovery is impossible. On account of the handicaps of this kind we have not endeavored to go extensively into fertilizer and variety studies with all kinds of crops here, but have confined our major efforts to the principal field crops of the region and to certain new crops brought in from other countries and to the larger projects with beef cattle, pastures and forestry.

Forestry Experiments: If we were to make comparisons of the most important agricultural and economic problems in South Carolina at the present time, we would say that the protection and reforestation of our cut-over and waste lands in South Carolina is next in importance to boll weevil control. Of the ten to eleven million acres of land in South Carolina not utilized for other purposes and which ought to be growing trees, not more than half is in forests. In the large majority of cases, these forests are receiving no particular attention with a view of making them produce the best quality and the maximum quantity of timber. We are cutting about twice as much timber as we are growing, and it is easy to see that at this rate our present timber supply will not last more than 25 or 30 years.

The big problem from the forestry standpoint is the reforestation of the cut-over and abandoned lands. This is a comparatively simple matter in most sections of the state. If fires are kept out and a few

seed trees are left, our pines will readily come back. What we need most of all is to protect these cut-over lands and young forests from fire. It is estimated that fires burn over 40 percent of our cut-over and wood lands every year. The annual loss to timber and growing trees alone probably exceeds one-half million dollars. In addition to this, we have a still greater loss resulting from the destruction of the very small trees which are just getting started. A few thousand dollars of state funds, expended in cooperation with the United States Forestry Service, would go a long way toward controlling these fires and preventing this enormous loss.

During the past 12 years we have conducted experiments at the Coast Station looking to the development of methods of reforesting these cut-over pine lands. We have made intensive studies of methods of seeding our common species of pine, and have introduced several species which are not native to this section. This work has been conducted in cooperation with the Forestry Service of the United States Department of Agriculture, and is now producing results which are of value in making recommendations as to reforesting these waste lands.

The Slash pine which we planted seven years ago on a plat of land in this experimental area now measures from 12 to 18 feet in height. Studies made of growing trees of this species elsewhere show that two crops of timber can be grown during the life of the average individual.

We are also making studies of the natural reproduction of the Long Leaf and Loblolly pines, and are studying the influence of burning upon natural reproduction and rapidity of growth of these pines. Where the land is burned over every year, we get no reproduction at all with any of the species except the Long Leaf pine. Only a few scattering individuals of this species survive the fires, and these grow very slowly and seldom develop into good vigorous trees. Where the fires were kept out, all three of the species of pine common to this section reseeded themselves abundantly and grew off rapidly. In fact some of our pastures, where we have kept fires for 6 or 8 years, have grown up to such thick stands of pines that the grass has been entirely shaded out.

Pasture Experiments

We are continuing pasture experiments along the lines reported in our last annual report. The areas seeded to lespedeza and carpet grass are continually being increased, and while this mixture does not produce good pastures on the poorest of these cut-over lands, it is producing good sod and excellent grazing on lands that are sufficiently fertile to support growth. Where a small amount of fertilizer has been used to start the carpet grass off, it has grown much more rapidly and produced a sod in a much shorter time than where

the seed are sown on the poor cut-over lands without any fertilizer. One of the principal difficulties in making pastures in this section is the removal of the shrubbery, which interferes seriously with getting pasture grasses started. We have used a herd of goats very effectively in keeping down the small shrubbery until the grass gets started, but our best development has come from areas where we have gone in and grubbed up the small oaks and gallberries and plowed the land before seeding. In this way good pastures have been developed in two years.

Vasey grass, a species of *Paspalum* from South America, is making excellent growth in plats seeded last spring and promises to be a good pasture grass

Beef Cattle

We are continuing to build up our herd of Aberdeen-Angus cattle and are using these for grazing tests and wintering experiments at this Station. We are weeding out the poor individuals among the grades which we have had for several years, and are retaining only the purebreds and the best grades. A large part of the herd was utilized during the winter for experiments to determine the best ration for wintering a breeding herd. They were divided into three lots, the aged cows, the two-year heifers, and yearling heifers, being kept separate and all were wintered on cotton seed meal and sorghum silage. The heifers gained about 6 pounds a day in this ration and the mature cows made smaller gains. The cost of wintering from December 19 to March 7 with this ration was \$13.85 per head for the cows, \$9.68 for the two-year old heifers, and \$7.76 for the yearling heifers.

Crops

The work with field crops was seriously interfered with this season on account of excessive rains, the rainfall in June being 6.7 inches, July 9.18 inches, and in September 16 inches. The variety tests, spacing tests, and fertilizer tests with cotton which have been under way at this station for several years were continued but the crops were so badly damaged by rain in July and by the dry weather in August that the yields were not sufficiently uniform to make the results of any value. The cotton yields were taken however, and they show that Salisbury, Coker's Cleveland, College No. 1, Webber 49, were the highest yielding varieties. The corn variety test made only fair yields on account of the very unfavorable weather. Hastings, Pee Dee, No. 5, and Douthitt gave the best results. The cover crop and rotation tests with cotton and corn are on land that is very well drained during the ordinary season and made better growth than the other crops this year. The cotton and corn yields on these plats were fairly satisfactory. We conducted a series of 12 plats in boll weevil control experiments at this station this season but the un-

favorable weather, coupled with the fact that there was practically no weevil damage until very late in the season made the results of little value. The cotton yields were fairly good on the ridges and better drained portions of the farm, but the low places were drowned out entirely.

In addition to the experiments with cotton and corn for the past two years this station has cooperated with the Office of Cereal Investigation of the United States Department of Agriculture in testing about 40 strains of upland rice. Eight of the most promising strains were planted on tenth acre plots and satisfactory yields were obtained. The indications are that the best of these strains can be planted profitably on similar soils in this section for the production of rice for home use.

Truck Experiments

We are continuing to conduct experiments at this station with some of the principal truck crops grown in this region. Of special interest at this time is a fertilizer test with Irish potatoes, results of which have been referred to in the section of this report on the experiments with fruits and vegetables. The best results were obtained again this year with 7-5-5. In fact, this fertilizer has produced the highest yield for the past three years. The yields this year were from 60 to 75 barrels per acre. The source of seed test also continued to give interesting results and this is likewise referred to in the other section of the report. At this station the Wisconsin certified seed produced the highest yields, certified seed from Kentucky, Vermont and Virginia following in the order named.

Besides the experiments with onion and lettuce previously referred to, we have started some test at this station with blue berries and have planted some citrus Trifoliata stock for the purpose of budding satsuma oranges on these next summer. We made a trial planting of satsumas at this station in 1917 but they were destroyed by the exceptionally cold weather of that winter. Since the temperature was lower at that time, however, than it had been in 30 years, it seems that it might be worth while to make another trial of this fruit which is being brought further north almost every year.

Miscellaneous

The small home orchard put out several years ago is now in bearing and we have additional evidence that grapes, peaches, plums, and figs do well at this station.

About 8 acres of additional land has been cleared and this when it is underdrained will give us additional facilities for our work with crops. We are now engaged in clearing some of the high ridge land that will be more representative of the cultivated land of this section, and we expect to use this for fundamental soil fertility studies with

field crops. The rapidity with which this station develops will be gaged largely by the funds available for extension along new lines and very little in the way of additional development can be expected until the appropriations for agricultural research are increased.

PUBLICATIONS

The growing interest in scientific agriculture and the consequent greater appreciation of agricultural research work has brought about a much greater demand for publications of the South Carolina Experiment Station.—this in spite of the fact that Extension Service publications supply a large part of the popular demand for agricultural instruction. Consequently our supplies of Experiment Station publications are used up rapidly, making more urgent the need for new publications as soon as new material becomes available. This applies particularly to certain lines which have become more popular under the changing agricultural conditions.

The mailing list of the Station now contains about five thousand names, mostly South Carolina farmers, and new names are being added more rapidly than formerly. However, the list is kept closely revised so that no "dead" names remain very long on the list, which is classified so that any given publication is sent only to those who have asked for material on the subject to which that publication belongs. In this way much waste of printed matter is prevented.

Publications Issued

During the fiscal year six new publications were issued as follows:

Bulletin 216—"Velvet Beans for Dairy Cows"

Bulletin 217—"Analyses of Commercial Fertilizers"

Bulletin 218—"Certified Seed in Irish Potato Production"

Bulletin 219—"Cotton Production; Factors Affecting Earliness and Yield"

Circular 31—"Boll Weevil Investigations in 1923"

Thirty-sixth Annual Report for the year ending July 30, 1923.

Experiment Station Library

With the separation during the preceding fiscal year of the library and the museum, resulting in more room for the library and less disturbances from other sources, the library has had the chance during this fiscal year to make many improvements and to do better work.

The number of research workers, extension workers, teachers and students using the library daily is increasing, and it is apparent that the library is greatly appreciated by all concerned.

The annual report of the Librarian, Mrs. Helen Sloan Torrence, shows much further progress in work done and service rendered. During the fiscal year there were 705 books accessioned and made

ready for use, 358 volumes bound, 7363 bulletins received, 3876 agricultural journals received. In addition, 4508 pieces of miscellaneous mail, consisting chiefly of circular mail on agriculture, were received and handled.

Publicity Work

The usual practice has been followed of writing News Letters and special articles for The Weekly News Notes and for newspapers and agricultural journals, calling attention to the new publications of the Station and to older publications of new importance, and special articles have been prepared summing up various phases of research work for the benefit of the public. Articles by various members of the Station staff have also been prepared and given publicity through the Division of Publications, and otherwise. The material in these articles is, of course, based largely on the results of our research work as conducted during the fiscal year or before. In this way the public is given a wider and better knowledge of the work which the Station does, and this in turn enables us to be of great service to the public. No opportunity is lost to remind the people of the need and value of agricultural research.

THE SAND HILL STATION

Some years ago the Board of Trustees of Clemson College, planning to round out the research work so as to have stations represent the principal regions of the state, decided that as soon as funds could be secured for this purpose they would establish a sub-station somewhere in the sand hill section of the state. Early in the summer of 1924 the Columbia Chamber of Commerce took up with us the matter of establishing such a station on the Camp Jackson site in Richland county. This served to open up again the whole matter of the proper location for such a station and caused us to survey sites offered in Aiken, Lexington, Richland, Kershaw, and Chesterfield counties.

The urgent need of an experiment station in the sand hill section is very evident. The sand hill region proper consists of a belt 50 to 100 miles wide across the center of the entire state. Besides this region there are large areas all over the coastal plain region where the sandy types of soil predominate. The Norfolk series which is the type that includes the coarse sandy soils, is more abundant than any other soil type in the state and represents nearly one-third of the total area of the state. At the present time this institution has no facilities for experimenting with crops, fertilizer, rotations, fruits, or vegetables on this large and important soil type. There is reason to believe that these soils can be improved to the point where they will produce more cotton under boll weevil conditions than is produced by the more fertile types of soil in other sections. The sand hills

are known to be adapted to the production of peaches, dewberries, muscadine grapes, and other fruits and certain crops such as sweet potatoes, peanuts, melons, etc., are known to do best in this region. The station, however, has not had opportunity to experiment with these crops under these conditions nor to determine the practices, fertilizers, varieties, etc. that will insure success and reduce the hazards of production. Many fundamental soil fertility problems now needing solution could be worked out better on a sand hill station than elsewhere because here you would have pure cultures of sand to work with and the fertilizer and rotation effects would not be obscured by stored up fertility or other variable factors.

This large section of our state which is now but poorly developed could be made one of the most prosperous parts of our commonwealth if we could by adequate research work learn how to utilize these soils in producing fruits, vegetables, and new crops that would give us additional industries and provide new sources of income and increase the wealth of the state. A comparatively small amount of money invested in this enterprise should return large returns on the investment and help to make a section permanently prosperous that is now exceedingly poor and undeveloped.

SUPPORT FOR AGRICULTURAL RESEARCH

At a time like this with a poor cotton crop which is bringing a lower price than that received during the past few years and with taxes on real property high, the question of adequate support of our state institutions looms large in the minds of our people. In this dilemma, however, we must not lose sight of the fact that agriculture is our basic industry and is the occupation in which two-thirds of our people are engaged. The research department of Clemson College is the only organized agency for studying the fundamental factors concerned in successful production of crops, fruits, and vegetables, and the only agency authorized by the state to conduct research work looking to the promotion of our agriculture. The members of the Experiment Station staff are the technical experts in this business of farming which engages the attention of the large majority of our people, and it is largely through the new facts and improved practices developed by them that our agriculture is improved and farming made more profitable.

If it were not for the research workers the teachers in the classroom and laboratory and the county agents and specialists in the fields would soon run out of something to teach and something to demonstrate.

Our most noted achievements in agricultural advancement have come from practices based on scientific research. In the short space of thirty years the South Carolina Experiment Station with its meager

support has added much to our knowledge of the science of agriculture and has been an important factor in our progress as a state and nation. We have only to mention the intelligent fertilizer practices, crop rotation, and improved varieties that have increased our yields 80 percent during the past 20 years, the methods of controlling cotton boll rot, cotton wilt, and of keeping sweet potatoes, the introduction of better varieties of fruit and vegetables, the introduction of new and better field crops and the working out of rations and practices which make livestock production and dairying profitable under our conditions; to show how greatly all of our people have profited by this research work in agriculture.

The need is so great for additional scientific information regarding this, our principal business, that any reasonable amount of public funds properly expended would pay a hundred fold.

We should remember too that the present appropriation for this important work is not large. It represents an average expenditure of 38 cents for each farm in the state or an expenditure of one dollar for each \$3,626.00 worth of farm products produced on South Carolina farms during 1923. It is certainly reasonable to expect that a larger expenditure than this could be profitably expended to find out additional fundamental facts about our chief business.

PROJECTS UNDER WAY

The following is a list of projects now under way in the Research Department:

AGRONOMY DIVISION:

- Cotton culture and spacing tests
- Corn Cultural Tests
- Ear-to-row breeding work with corn
- Effects on corn of companion cropping with legumes
- General Comparative fertilizer tests
- Comparative tests of phosphoric fertilizers
- Comparative tests of potash fertilizers
- Comparative tests of sources of nitrogen
- Variety tests with corn
- Variety tests with cotton
- Variety tests with wheat
- Variety tests with oats
- Variety tests with barley
- Variety tests with sorghum
- Variety tests with peanuts
- Variety tests with velvet beans
- Variety tests with soybeans
- Comparative tests of grasses and forage crops
- Tests with imported grasses and forage plants

Plant-to-row selection of wheat

The inheritance of barrenness in corn

A study of inheritance in oats

The effect of stirring soil on moisture content, oxidation, nitrification and crop yield

A study of factors influencing oil content of cotton seed.

Comparative tests of nitrogenous fertilizers at the Pee Dee and Coast Stations

General Comparative fertilizer tests with cotton, corn, and small grain at the two sub-stations

Breeding work with cotton

Breeding work with corn

Breeding work with wheat

Breeding work with barley

Breeding work with rye

Tests on time of applying potash to cotton

Test on time and method of applying fertilizers to cotton

Test of theoretical amount of fertilizer compared with popular formula

The comparative value of different legumes as soil improvers when used in rotation with cotton and corn

General comparative fertilizer tests conducted in cooperation with farmers on various soil types

The effect of continuous fertilizer on soil composition

ANIMAL HUSBANDRY DIVISION

Comparative tests of the value of velvet bean meal, peanut meal, and cottonseed meal in hog feeds

Comparative tests of rape, crimson clover, bur clover, alfalfa, rye, and barley as winter grazing crops for hogs

Factors influencing production of soft pork

Tests with the breeds of sheep

Breeding experiments with horses and mules

Comparative tests of peanuts, sweet potatoes, soybeans, velvet beans and corn for pork production

A study of the food value of velvet beans for hogs and beef cattle

A comparison of protein feeds for pigs

Cost of producing hogs

BOTANY DIVISION:

A study of the factors influencing the growth and development of cotton buds and bolls

A study of corn root diseases

A study of rust resistance in small grains

A study of the bacterial diseases of cotton

Plant disease survey

Miscellaneous cotton disease investigations

Forestry experiments to determine methods of seeding and rate of growth of various species

Cotton anthracnose investigations

The bacterial content of milk and its control

DAIRY DIVISION:

The determination of the most economical concentrate to balance the dairy ration in the South.

The prepotency of bulls

Corn silage as compared with sorghum silage for milk production

The feed required and the cost of raising dairy calves

Line breeding and out-crossing as systems of breeding dairy cattle

Line breeding of Holsteins

Official testing of dairy cows in the state

ENTOMOLOGY DIVISION:

Winter packing of bees

Effect of temperature-moisture on insect activity

The influence of different factors on the hibernation of the boll weevil

Dusting as a means of boll weevil control

The toxicity of insecticides

HORTICULTURAL DIVISION:

Nitrate of soda test on bearing peach trees

Fertilizer test on young and bearing peach trees

Variety tests with apples and grapes

Methods of pruning bunch grapes

Test of sources of Irish potato seed

Fertilizer tests on Irish potatoes

Fertilizer tests on Asparagus

Comparison of certified and non-certified potato seed

Breeding work on Lookout Mountain potatoes

Fertilizer tests on lettuce

Sweet potato investigations

BOLL WEEVIL CONTROL DIVISION:

Comparative efficiency of calcium arsenate dust, calcium arsenate-molasses mixtures, and other liquid poisons for boll weevil control in the cotton fields in different sections of South Carolina

Field tests with various makes and kinds of machines for applying poison to cotton

Tests in the field with various boll weevil poisons and proprietary mixtures promoted for boll weevil control

Effect of quality of seed cotton on yield, staple, lint percentage, and money value per-acre

Effect of topping cotton on rate of fruiting and development and yield

Effect of pruning on fruiting of cotton

Effect of time of planting on development and fruiting of cotton

Effect of seed treatment on yield, etc., of cotton

Tests of methods of cultivating cotton

Effect of late cultivation

Time of turning under cover crops of rye

Time and method of preparing land for cotton

Hill test of cotton

Cotton spacing tests

Effect of fertilizers on fruiting habits of cotton

Time of applying fertilizers to cotton

Cotton variety tests

Respectfully submitted.

H. W. BARRE,

Director of Experiment Station

REPORT OF SECRETARY FERTILIZER BOARD

Prof S. B. Earle

Acting Pres, Clemson College

Clemson College, S. C.

Dear Sir:—

I respectfully submit the following report of the work of the Fertilizer Department for the fiscal and fertilizer year ending on June 30, 1924.

The total tonnage as shown by the sales of tags exceeded that of last year by 202,674 tons, or very nearly 30 percent. The menace of the boll-weevil to cotton curtailed last season by poison aided by climatic conditions resulted this year in an increased acreage and application of fertilizers to that crop. But as shown by samples and their analyses, the mineral ammoniates were largely used in their composition, and their cost to the growers reduced. Fertilizers for tobacco and truck crops were maintained at their usual, high grade standard, while the purchase of raw materials in car load lots for home mixing more largely prevailed. Discrimination in the use of mixtures best adapted to different crops on different types and conditions of soil, determines their value in successful production.

The Board of Control has endeavored to enforce strictly all laws and regulations governing the manufacture and sale of fertilizers in this State, to maintain and improve their standard and quality, blacklisting the use of inferior raw materials in their manufacture or found deficient below their guarantee. The new fertilizer law of 1920 eliminated from its provisions any part of the penalty given to the State or College as formerly and now seeks to give the ultimate buyer or consumer all the penalties for any and all deficiencies found below the manufacturer's guarantee. This department cannot know, and when sold through brokers or agents the manufacturers do not know, who are the ultimate buyers of these deficient brands; only the dealers in such cases know who were the individual buyers, and the law under stringent penalties requires these dealers to make prorata distribution of these rebates to individual buyers. This department advertises with black-hand every deficiency of three per cent or more in our published bulletins.

ANALYSIS AND INSPECTION

The work of inspection has been faithfully conducted by six inspectors, each in his own motor car, covering the territory assigned

him every week or ten days since the opening of the season, and collecting for analysis larger number of samples than last season. The cost of this method of travel was greater than that by railways formerly used, but has shown itself more efficient.

A larger number than any former year of individual or farmer's samples have been sent to the Chemists for analysis; and to the demonstration agents they are largely indebted for aid in this matter. The co-operation of this agency,—each in his own county,—will use to the usefulness of this department.

A complete report of the results of analysis has been compiled in Bulletin No. 220 now sent to our entire mailing list; and for costs incurred, I respectfully refer to the report of our College Treasurer.

Respectfully submitted

H. M. STACKHOUSE, Secretary.

REPORT OF THE CHIEF CHEMIST

Clemson College, S. C., August 23, 1924

Professor S. B. Earle, Acting President,
Clemson College, S. C.

Dear Sir:—

I respectfully submit the following report of the analytical work of this Department on commercial fertilizers, waters, etc., done for the Board of Fertilizer Control, and for the citizens of the State, and for other departments of the college, during the year ending June 30th, 1924.

For the sake of comparison, the figures for last year are given side by side with those for this year:

| | 1922-1923 | 1923-1924 |
|--|------------|------------|
| Official samples of fertilizer | 1181 | 1272 |
| Farmers' samples of fertilizers | 146 | 175 |
| Waters | 48 | 58 |
| Ores, minerals, rocks, etc., for identification..... | 38 | 23 |
| Limestones, marl and lime | 6 | 9 |
| Assays for gold and silver | 6 | 6 |
| Ashes (wood, etc.) | 6 | 2 |
| Miscellaneous | 21 | 34 |
| S. C. Experiment Station samples | 403 | 2195 |
| | <hr/> 1855 | <hr/> 3774 |

The most striking facts shown in this summary are: First, that the official samples of fertilizers have increased this year only a little over 7½ percent over last year; second, that the farmers' samples of fertilizers have increased about 20 percent; third, that the number of samples of water analyzed this year is about 20 percent more than last year; finally, that the number of samples analyzed for, or received from the Experiment Station for analysis is over five times the number received last year. The total number of samples received for analysis from all sources is more than double the number received last year.

A complete report of the work done for the Experiment Station is made to Director H. W. Barre, but I may say for your information that the 2195 samples listed above consisted of: Cotton seed 1950 samples; cotton seed special samples 12; calcium arsenate 124 samples, of which 30 were examined for density only; soils 90 samples of which 75 have not yet been analyzed; feeds for Animal Husbandry Division 11 samples; cotton seed for arsenic samples 2; boll weevil preparations 4 samples; soy bean hay for a citizen of the state one sample; stable manure one sample from the College farm for C. S. Patrick.

OFFICIAL FERTILIZER SAMPLES

Classification

| | 1922-1923 | 1923-1924 |
|--|------------|------------|
| Complete fertilizers | 796 | 906 |
| Special mixtures (phosphoric acid and ammonia) | 90 | 65 |
| Acid phosphates | 97 | 82 |
| Acid phosphate with potash | 8 | 4 |
| Cotton seed meal | 39 | 48 |
| Nitrate of soda | 59 | 58 |
| American potash | 1(?) | 0 |
| Foreign potash | 56 | 69 |
| Dried blood | 2 | 2 |
| Fish | 23 | 16 |
| Tankage | 2 | 2 |
| Sulphate of ammonia | 4 | 3 |
| Miscellaneous | 4 | 17 |
| | <hr/> 1181 | <hr/> 1272 |

The miscellaneous samples were:—one each—fish tankage, without guarantee; castor pomace; rape-castor pomace; nitrate of soda, without guarantee; “nitropo”; acid phosphate, containing over one percent each of ammonia and potash; “tailings”, without guarantee; special mixture.

Two samples of nitrate of soda containing potash, but not guaranteed, containing ammonia and potash. Seven samples of special mixture, containing or furnishing, ammonia only. These 17 samples have been omitted from the discussion which follows, with the exception of the one sample furnishing ammonia and potash—thus leaving 1256 samples to be considered.

Deficient Samples

Of the 1256 samples considered in this discussion, 123 fall below the commercial value based on guarantee, as follows:—

| | |
|--|----|
| In available phosphoric acid | 5 |
| In ammonia | 45 |
| In potash | 13 |
| In available phosphoric acid and ammonia | 8 |
| In available phosphoric acid and potash | 6 |
| In ammonia and potash | 42 |
| In available phosphoric acid, ammonia and potash | 4 |

123

Last season out of 1168 samples, 182, or 15.58 percent, were deficient in commercial value based on guarantee, while this season the number so deficient is 123 out of 1256 samples, or 9.79 percent.

The extent to which these 123 samples fell below the guaranteed analysis in percent is as follows:—

| | 0.00-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|-----------|-----------|-----------|--------|------------|
| In available phosphoric acid | 7 | 3 | 5 | 5 | 0 |
| In ammonia | 29 | 30 | 25 | 12 | 5 |
| In potash | 13 | 11 | 22 | 12 | 7 |
| | <hr/> | <hr/> | <hr/> | <hr/> | <hr/> |
| | 49 | 44 | 52 | 29 | 12 |

This is in every respect a better showing than last year, both as to the number of deficient samples, and as to the extent of deficiency.

Of the 123 samples which fall below guaranteed commercial value, 43 were deficient three percent or more in commercial value, as follows:

| | |
|--|-------|
| In available phosphoric acid | 1 |
| In ammonia | 16 |
| In potash | 6 |
| In available phosphoric acid and ammonia | 1 |
| In available phosphoric acid and potash | 1 |
| In ammonia and potash | 15 |
| In available phosphoric acid, ammonia, and potash..... | 3 |
| | <hr/> |
| | 43 |

Last season out of 182 samples deficient in commercial value based on guarantee, 60, or 32.96 percent, were three percent or more deficient, while this year 43 samples out of 123, or 34.95 percent, were three percent or more deficient, a slight increase. When the comparison is made on the total number of samples, last season out of 1168 samples 60 were deficient three or more percent, or 5.14 percent of the total; this season 43 samples out of 1256 were three percent or more deficient in commercial value, or 3.42 percent of the whole number, which is a slight decrease.

The extent to which these 43 samples, deficient three percent or more in commercial value, fell below the commercial value guaranteed is as follows:

| | 0.00-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|-----------|-----------|-----------|--------|------------|
| In available phosphoric acid | 2 | 0 | 1 | 3 | 0 |
| In ammonia | 1 | 2 | 16 | 11 | 5 |
| In potash | 3 | 4 | 4 | 8 | 6 |
| | <hr/> | <hr/> | <hr/> | <hr/> | <hr/> |
| | 6 | 6 | 21 | 22 | 11 |

In addition to the 123 samples deficient in commercial value based on guarantee, there were 366 samples which were found deficient,

below the guaranteed analysis, in one or more ingredients, the deficiency, however, being made up by an excess of other ingredients, as follows:

| | |
|---|-------|
| In available phosphoric acid | 54 |
| In ammonia | 105 |
| In potash | 173 |
| In available phosphoric acid and ammonia..... | 1 |
| In available phosphoric acid and potash..... | 10 |
| In ammonia and potash | 23 |
| | <hr/> |
| | 366 |

Last season out of 1168 samples, 360 were deficient in one or more ingredients, but not deficient in commercial value based on guarantee, or 30.82 percent, while this season out of 1256 samples, 366 were so deficient, or 29.14 percent, which is a very slight decrease.

The extent to which these 366 samples fell below the guaranteed analysis in percent is as follows:

| | 0.00-0.10 | 0.10-0.25 | 0.25-0.50 | 0.50-1 | 1 and over |
|------------------------------|-----------|-----------|-----------|--------|------------|
| In available phosphoric acid | 23 | 20 | 12 | 8 | 4 |
| In ammonia | 78 | 41 | 10 | 0 | 0 |
| In potash | 49 | 91 | 48 | 24 | 3 |
| | <hr/> | <hr/> | <hr/> | <hr/> | <hr/> |
| | 150 | 152 | 70 | 32 | 7 |

While these figures show slightly fewer deficiencies in ammonia, there is an increase of potash deficiencies, and these potash deficiencies are more serious than last year. The number of potash deficiencies 0.10-0.25 last year 70, this year 91; 0.25-0.50 last year 41, this year 48; 0.50-1 last year 19, this year 24; 0.00-0.10 last year 62, this year 49.

In connection with the subject of deficiencies, the results of some of the analyses this season are interesting as compared with last season:

Acid Phosphates: As was the case last season, there were no goods of this kind guaranteed less than 16 percent available phosphoric acid. Of the 82 samples received for analysis this season four were found deficient, but of these four one only was three percent or more deficient in commercial value based on guarantee. Last season out of 97 samples five were found deficient, and of these five three were three percent or more deficient in commercial value. The quality of these goods continues good, and many of them analyse from 17 to 19 percent, on a guarantee of 16 percent.

Acid Phosphates with Potash:— There were only four samples of goods of this kind received for analysis this season, of which three were guaranteed 10-0-4, and one sample 10-0-2, but analysed

10-0-4. Of the samples guaranteed 10-0-4, one was found up to guarantee, one deficient in potash, but not in commercial value; and one deficient in commercial value, but not three percent. Last season we had eight samples, all guaranteed 10-0-4, of which five were found deficient on analysis; one deficient in phosphoric acid and three percent in commercial value; four deficient in potash, one of which was deficient in commercial value, but not three percent; the remainder being not deficient, in commercial value.

In connection with the deficiencies in potash, not only in acid phosphates with potash, but also in other mixed goods, the following summary of potash deficiencies for the past 20 years may be interesting. It is to be noted that none of the deficiencies here listed are of samples deficient in commercial value.:

| Year | Number of Samples | Deficient in one or more Ingredients | Deficient in Potash only | Deficient in Potash Percent |
|------|-------------------|--------------------------------------|--------------------------|-----------------------------|
| 1905 | 522 | 165 | 53 | 32.12 |
| 1906 | 655 | 201 | 62 | 30.84 |
| 1907 | 743 | 153 | 34 | 22.22 |
| 1908 | 713 | 161 | 54 | 33.54 |
| 1909 | 805 | 197 | 85 | 43.14 |
| 1910 | 1188 | 235 | 86 | 36.60 |
| 1911 | 1605 | 393 | 182 | 46.31 |
| 1912 | 1689 | 380 | 225 | 59.12 |
| 1913 | 1922 | 389 | 90 | 23.13 |
| 1914 | 2537 | 534 | 113 | 21.16 |
| 1915 | 1227 | 333 | 107 | 32.13 |
| 1916 | 1598 | 378 | 54 | 14.28 |
| 1917 | 1594 | 477 | 75 | 15.72 |
| 1918 | 1474 | 438 | 68 | 15.52 |
| 1919 | 1301 | 362 | 100 | 27.62 |
| 1920 | 1668 | 519 | 193 | 37.19 |
| 1921 | 763 | 229 | 116 | 50.65 |
| 1922 | 722 | 230 | 111 | 48.26 |
| 1923 | 1181 | 360 | 151 | 41.94 |
| 1924 | 1272 | 366 | 173 | 47.27 |

This summary shows that of the samples deficient in one or more ingredients, but not deficient in commercial value, a very large percentage is deficient in potash only.

This deficiency was especially marked during the years 1909 to 1912, inclusive. While there was a considerable drop in 1913 and 1914, the percentage deficiency in 1915 was the same as in 1905. The results for 1916 to 1919, inclusive, are not very significant on account of the scarcity of potash salts. During this period many mixtures were made without potash, so-called "special mixtures", the number of

such mixtures amounting in 1916 to 555, in 1917 to 640, in 1918 to 470, and in 1919 to 357, in 1920 to 284. Since 1920 there have been less than 100 each year, indeed, this season only 65. The period 1920 to 1924, inclusive, marks a period of high potash deficiency in percentage. It will be noticed that there is a considerable increase over last year.

Top Dressers:— A larger number of samples of goods of this class were received for analysis this season than last. Attention was called in my last annual report to the falling off during the last three years. In 1921 there were only 24 samples; in 1922, 21 samples; and in 1923, 18 samples. This season 38 samples, or more than twice as many as last year were analysed. Of the 38 samples analyzed this season, 13 were deficient in ammonia, and of these 13, six, or nearly one half, were deficient in commercial value, and finally, three of the six or just one half were deficient three percent or more in commercial value.

The guarantee this year as compared with last season are as follows: 2-10-2, one found up to guarantee—last year, one deficient in ammonia, but not in commercial value; 2-7-0, 22 of which four deficient in ammonia, but not in commercial value, two deficient in ammonia, but not three percent in commercial value, and three which were three percent or more deficient in commercial value, the deficiency being due to shortage of ammonia—last year, twelve (12), of which four deficient in ammonia, but only two of these in commercial value; 2-10-0, four found up to guarantee—last year none; 4-7½-0, six, of which one was found deficient in ammonia, but not in commercial value—last year, three, all deficient in ammonia, but only one in commercial value; 4-10-0, one deficient in ammonia, but not in commercial value—Last year one found up to guarantee; 2-7-2, one found up to guarantee—last year none; 5-9-0, one deficient in ammonia and three percent in commercial value—last year none; 4-7-0, one deficient in ammonia, but not in commercial value—last year none; 0-9-3, one found up to guarantee—last year, none. While there has been a decline not only in the number of samples of topdressers received for analysis, but also in the variety on the market during the past few years, this season we have had more than twice as many samples as last year, and also more than twice as many different guarantees, there being nine this season as compared with four guarantees last year.

AVERAGES OF ANALYSES

| | 1922-1923 | | 1923-1924 | |
|--|-----------|------------|-----------|------------|
| Acid Phosphates | | | | |
| | Found | Guaranteed | Found | Guaranteed |
| Available phosphoric acid | 17.17 | 16.00 | 17.44 | 16.00 |
| Special Mixtures (acid phosphates with ammonia) | | | | |
| Available phosphoric acid | 9.06 | 8.23 | 6.43 | 5.69 |
| Ammonia .. | 3.74 | 3.73 | 5.64 | 5.55 |
| Complete Fertilizers | | | | |
| Available phosphoric acid..... | 8.72 | 8.15 | 9.06 | 8.46 |
| Ammonia | 3.56 | 3.45 | 3.61 | 3.49 |
| Potash soluble in water | 3.39 | 3.42 | 3.52 | 3.48 |
| Cotton Seed Meals | | | | |
| Ammonia equivalent of nitrogen | 7.16 | 7.01 | 7.29 | 7.02 |
| Nitrate of Soda | | | | |
| Ammonia equivalent of nitrogen | 18.61 | 18.08 | 18.70 | 18.10 |
| Kainits | | | | |
| Potash soluble in water..... | 13.10 | 12.55 | 13.64 | 12.19 |
| Muriate of Potash | | | | |
| Potash soluble in water | 50.66 | 53.14 | 48.85 | 49.67 |
| Sulphate of Potash | | | | |
| Potash soluble in water | 48.96 | 49.00 | 49.11 | 48.67 |
| Manure Salts | | | | |
| Potash soluble in water | 17.83 | 20.00 | 20.05 | 20.00 |
| Available phosphoric acid | 10.64 | 10.00 | 10.72 | 10.00 |
| Potash soluble in water | 3.70 | 4.00 | 3.75 | 3.50 |

Acid Phosphates with Potash

As was the case for the last three years, no samples of potash salts were received this season designated as American potash, though one sample was listed last year, a muriate, as doubtful, but it was believed to be American on account of the very high guarantee. The highest grade muriate now on the market is American potash.

The averages of the potash salts given above represent the following numbers of samples: Kainits this year 59, last year 41; muriate of potash this year three, last year four; sulphate of potash this year three, last year four; manure salts this year four, last year five. Acid phosphates with potash this year four, last year eight.

The following table shows the yearly averages of the analyses of commercial fertilizers from the time the Board of Trustees of The Clemson Agricultural College of South Carolina took charge of the fertilizer inspection down to the present time, or from 1891 to 1924, inclusive:—

YEARLY AVERAGES OF ANALYSES FROM 1891 TO 1924, INCLUSIVE

| Season | Acid Phos- phates | | Acid Phosphate with Potash | | Complete Fertilizer | | | | Cotton Seed Meals | | | | Kamita | | Muriate Potash | | Nitrate of Soda | | Acid Phosphate with Ammonia | |
|-----------|----------------------|--|-------------------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|----------------------|----------------------|--|--------------------------------|--|
| | Number of Samples | Available Phos- phoric Acid— Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Ammonia—Per Cent. | Potash Soluble in Water— Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Ammonia—Per Cent. | Potash Soluble in Water— Per Cent. | Number of Samples | Potash Soluble in Water— Per Cent. | Number of Samples | Ammonia—Per Cent. | Number of Samples | Available Phos- phoric Acid— Per Cent. | Ammonia—Per Cent. | |
| 1890-1 | 49 | 13.02 | 19 | 11.84 | 1.65 | 173 | 9.31 | 2.89 | 1.96 | 30 | ..... | 8.37 | 21 | 12.79 | 1 | 19.22 | 1 | 19.22 | ..... |  |
| 1891-2 | 29 | 12.92 | 16 | 11.50 | 1.49 | 152 | 8.88 | 2.80 | 1.95 | 25 | ..... | 8.41 | 18 | 12.51 | 1 | 18.63 | 1 | 18.63 | ..... |  |
| 1892-3 | 48 | 12.82 | 26 | 11.63 | 1.22 | 150 | 9.00 | 2.91 | 1.65 | 20 | 2.62 | 8.48 | 20 | 12.05 | ..... | ..... | ..... | ..... | ..... |  |
| 1893-4 | 46 | 13.24 | 22 | 12.01 | 1.51 | 182 | 9.27 | 2.53 | 1.79 | 22 | 2.45 | 8.64 | 17 | 12.37 | ..... | ..... | ..... | ..... | ..... |  |
| 1894-5 | 46 | 13.55 | 15 | 12.09 | 1.66 | 87 | 9.42 | 2.55 | 1.77 | 33 | 2.58 | 8.19 | 19 | 12.30 | ..... | ..... | ..... | ..... | ..... |  |
| 1895-6 | 42 | 13.43 | 26 | 11.99 | 1.39 | 115 | 9.31 | 2.64 | 1.86 | 34 | 2.57 | 8.45 | 16 | 12.45 | ..... | ..... | ..... | ..... | ..... |  |
| 1896-7 | 59 | 13.61 | 31 | 12.06 | 1.61 | 117 | 9.55 | 2.70 | 1.91 | 40 | 2.53 | 8.69 | 22 | 12.44 | ..... | ..... | ..... | ..... | ..... |  |
| 1897-8 | 63 | 13.67 | 50 | 11.54 | 2.06 | 141 | 9.15 | 2.70 | 1.93 | 39 | 2.87 | 8.39 | 20 | 12.68 | ..... | 19.23 | 1 | 19.23 | ..... |  |
| 1898-9 | 73 | 13.74 | 68 | 11.77 | 1.89 | 134 | 9.32 | 2.73 | 2.21 | 40 | 2.76 | 8.25 | 14 | 12.78 | 2 | 18.96 | 2 | 18.96 | ..... |  |
| 1899-1900 | 73 | 13.53 | 63 | 11.58 | 2.00 | 124 | 9.50 | 2.73 | 2.13 | 52 | 2.27 | 8.73 | 8 | 12.73 | 2 | 19.01 | 3 | 19.01 | ..... |  |
| 1900-1 | 56 | 14.00 | 55 | 11.49 | 2.65 | 139 | 9.40 | 2.87 | 2.47 | 60 | 2.38 | 8.55 | 154 | 12 | 12.61 | 2 | 19.03 | 3 | 19.03 | |
| 1901-2 | 45 | 14.11 | 51 | 11.09 | 2.51 | 141 | 9.39 | 2.84 | 2.34 | 49 | 2.57 | 7.98 | 16 | 12.85 | 4 | 19.03 | 3 | 19.03 | ..... |  |
| 1902-3 | 51 | 13.74 | 55 | 10.94 | 2.65 | 139 | 9.02 | 2.69 | 2.42 | 60 | 2.27 | 8.02 | 15 | 12.92 | 2 | 19.15 | 2 | 19.15 | ..... |  |
| 1903-4 | 59 | 14.32 | 75 | 11.12 | 2.81 | 180 | 9.12 | 2.99 | 2.90 | 67 | 2.28 | 7.92 | 11 | 12.94 | 7 | 18.87 | 6 | 18.87 | ..... |  |
| 1904-5 | 81 | 14.81 | 82 | 10.70 | 3.07 | 250 | 9.19 | 3.12 | 2.90 | 62 | 2.41 | 7.42 | 154 | 26 | 12.54 | 6 | 18.73 | 7 | 18.73 | |
| 1905-6 | 87 | 14.95 | 94 | 10.97 | 3.30 | 375 | 9.31 | 3.26 | 2.98 | 71 | 2.42 | 7.51 | 157 | 29 | 12.88 | 13 | 18.67 | 19 | 18.67 | |
| 1906-7 | 111 | 14.95 | 72 | 10.76 | 3.21 | 390 | 9.31 | 3.29 | 3.29 | 96 | 2.68 | 7.32 | 169 | 30 | 12.78 | 13 | 18.49 | 20 | 18.49 | |
| 1907-8 | 91 | 14.71 | 64 | 10.57 | 3.54 | 363 | 9.17 | 3.01 | 3.01 | 114 | 2.37 | 7.40 | 161 | 39 | 12.91 | 15 | 18.33 | 17 | 18.33 | |
| 1908-9 | 108 | 15.02 | 80 | 10.55 | 2.93 | 396 | 9.16 | 3.03 | 3.08 | 115 | 2.39 | 7.27 | 171 | 45 | 13.03 | 14 | 18.26 | 17 | 18.26 | |
| 1909-10 | 159 | 15.18 | 74 | 10.16 | 3.54 | 599 | 8.89 | 3.31 | 3.34 | 133 | 2.37 | 7.30 | 167 | 73 | 13.10 | 26 | 18.36 | 40 | 18.10 | |
| 1910-11 | 187 | 15.39 | 101 | 10.62 | 3.48 | 942 | 9.00 | 3.34 | 3.33 | 177 | 2.46 | 7.26 | 159 | 63 | 13.00 | 24 | 18.46 | 50 | 18.10 | |
| 1911-12 | 180 | 15.42 | 116 | 10.68 | 3.25 | 960 | 9.07 | 3.46 | 3.22 | 153 | 2.17 | 7.54 | 158 | 69 | 14.04 | 47 | 18.55 | 76 | 18.55 | |
| 1912-13 | 176 | 15.88 | 85 | 10.43 | 3.63 | 1199 | 8.86 | 3.54 | 3.57 | 171 | 2.56 | 7.37 | 165 | 69 | 13.72 | 65 | 18.41 | 92 | 18.41 | |
| 1913-14 | 229 | 16.10 | 91 | 10.63 | 3.93 | 1523 | 8.79 | 3.44 | 3.75 | 188 | 2.36 | 7.23 | 163 | 146 | 14.12 | 65 | 18.35 | 92 | 18.35 | |
| 1914-15 | 150 | 16.30 | 69 | 10.75 | 2.69 | 778 | 8.91 | 2.96 | 2.70 | 90 | 2.46 | 7.21 | 156 | 5 | 13.51 | 2 | 18.51 | 71 | 18.51 | |
| 1915-16 | 200 | 16.40 | 7 | 10.72 | 2.12 | 385 | 8.73 | 3.42 | 1.49 | 245 | 2.81 | 7.05 | 151 | 3 | 13.44 | 0 | 18.33 | 33 | 18.33 | |
| 1916-17 | 118 | 16.62 | 1 | 10.90 | 3.91 | 501 | 8.70 | 3.31 | 2.13 | 202 | 2.44 | 6.88 | 154 | 0 | 0.00 | 0 | 18.69 | 45 | 18.69 | |
| 1917-18 | 106 | 16.71 | 8 | 9.99 | 2.82 | 521 | 8.54 | 3.09 | 2.25 | 266 | 2.33 | 7.06 | 157 | 0 | 0.00 | 0 | 18.50 | 40 | 18.50 | |
| 1918-19 | 69 | 16.86 | 6 | 10.36 | 3.58 | 544 | 8.82 | 2.95 | 2.23 | 199 | 2.34 | 7.05 | 147 | 0 | 0.00 | 0 | 18.59 | 21 | 18.59 | |
| 1919-20 | 81 | 16.47 | 14 | 9.82 | 3.10 | 992 | 8.64 | 3.27 | 2.92 | 94 | 2.61 | 7.03 | 151 | 65 | 13.82 | 4 | 18.47 | 40 | 18.47 | |
| 1920-21 | 79 | 16.53 | 6 | 10.18 | 2.64 | 411 | 8.55 | 3.28 | 2.77 | 77 | 2.88 | 7.33 | 151 | 37 | 13.63 | 3 | 18.61 | 44 | 18.61 | |
| 1921-22 | 73 | 17.08 | 2 | 11.40 | 2.71 | 434 | 8.68 | 3.30 | 2.96 | 30 | ..... | 7.39 | 151 | 32 | 12.99 | 3 | 18.17 | 94 | 18.17 | |
| 1922-23 | 97 | 17.17 | 8 | 10.72 | 3.70 | 796 | 8.72 | 3.65 | 3.39 | 39 | ..... | 7.16 | 41 | 13.10 | 4 | 18.79 | 34 | 18.79 | | |
| 1923-24 | 83 | 17.44 | 4 | 10.64 | 3.75 | 906 | 9.06 | 3.61 | 3.52 | 48 | ..... | 7.29 | 59 | 13.64 | 3 | 18.70 | 58 | 18.70 | | |

NITROGEN

Deficiencies, Sources, Availability

Nitrogen Deficiencies—In connection with the subject of deficiencies in nitrogen, or ammonia equivalent, for the past 20 years, the following table is interesting. It is to be noted that none of the deficient samples listed is deficient in commercial value:

| Year | Number of Samples | Deficient in one or more Ingredients | Deficient in Nitrogen only | Deficient in Nitrogen Percent |
|------|----------------------|---|-------------------------------|----------------------------------|
| 1905 | 522 | 165 | 61 | 36.96 |
| 1906 | 655 | 201 | 87 | 43.28 |
| 1907 | 743 | 153 | 81 | 52.94 |
| 1908 | 713 | 161 | 77 | 47.82 |
| 1909 | 805 | 197 | 74 | 37.56 |
| 1910 | 1188 | 235 | 79 | 33.61 |
| 1911 | 1605 | 393 | 107 | 27.22 |
| 1912 | 1689 | 380 | 71 | 18.68 |
| 1913 | 1922 | 389 | 190 | 48.84 |
| 1914 | 2537 | 534 | 257 | 48.13 |
| 1915 | 1227 | 333 | 145 | 43.54 |
| 1916 | 1598 | 378 | 130 | 34.39 |
| 1917 | 1594 | 477 | 224 | 46.96 |
| 1918 | 1474 | 438 | 189 | 43.15 |
| 1919 | 1301 | 362 | 160 | 44.19 |
| 1920 | 1668 | 519 | 123 | 23.70 |
| 1921 | 763 | 229 | 22 | 9.61 |
| 1922 | 722 | 230 | 41 | 17.82 |
| 1923 | 1181 | 360 | 99 | 27.50 |
| 1924 | 1272 | 366 | 105 | 28.69 |

This table shows that of the samples deficient in one or more ingredients, but not deficient in commercial value, a very large percentage is deficient in ammonia only, with very few exceptions. The average deficiency in ammonia for the whole period of twenty years is a trifle less than 36 percent; for two seasons it amounted to nearly 50 percent; one season (1907) it amounted to more than 50 percent. The deficiency this season is almost the same as in 1911. Only once in twenty years has the deficiency been less than 10 percent, (1921).

Nitrogen, sources, and availability:—The fertilizer law, effective July 1, 1920, requires the manufacturer to guarantee the percent of water-soluble ammonia equivalent of nitrogen within such limits as the Board of Fertilizer Control may prescribe. The limits now in force will be found in the first part of the Fertilizer Bulletin for 1924. The limits allowed are as follows: For goods guaranteed up to and including 33 1-3 percent ten points or units; and fifteen points or units for goods guaranteed above that figure. For

example, goods guaranteed 25 percent would be passed if found 15 percent, or 35 percent; while, if guaranteed 50 percent water-soluble the goods would be passed if found 35 percent, or 65 percent.

The following table summarizes the results of the work for this season, and shows the number of samples falling within certain percentage limits, and also the percentage relation of these figures to the total number of samples examined, this relation being shown in parentheses:—

Percent Water-soluble
Ammonia Equivalent

Number of Samples

| of Nitrogen | 1922-1923 | 1923-1924 |
|--------------|---------------------|---------------------|
| Less than 10 | 0 | 0 |
| 10-20 | 3 | 1 |
| 20-30 | 1 | 2 |
| 30-40 | 3 | 4 |
| 40-50 | 7 (0.81 percent) | 12 (1.24 percent) |
| 50-60 | 34 (3.92 percent) | 21 (2.16 percent) |
| 60-70 | 108 (12.44 percent) | 71 (7.30 percent) |
| 70-80 | 256 (29.49 percent) | 286 (29.45 percent) |
| 80-90 | 338 (38.94 percent) | 438 (45.10 percent) |
| 90-100 | 118 (13.59 percent) | 136 (14.00 percent) |

While these figures speak for themselves, and show that highly water-soluble ammoniates are being used, it is fair to say that even organic ammoniates will analyze at least 10 percent water-soluble equivalent of nitrogen..

Of the 971 samples examined for water-soluble equivalent of nitrogen, listed in the foregoing table, 895 were guaranteed in water-soluble ammonia, or 92.17 percent, while last season out of 868 samples, 745, or 85.83 percent, were guaranteed. This is a great improvement over last season and shows that the manufacturers are very generally complying with the law requiring the guarantee of water-soluble ammonia equivalent of nitrogen.

According to the records of the Secretary of the Board of Fertilizer Control, these 971 samples were distributed between 75 companies, or subsidiaries, three of which did not guarantee any of their samples, namely, N. B. Josey Guano Co., four samples; and The Boykin Chemical & Fertilizer Co., two samples; Marion Fertilizer Works, Marion, three samples. Forty-seven of the seventy-five companies guaranteed all of their samples which fell into our hands for analysis, and the number of the samples of these 47 companies amounted to 895. There were, therefore, 76 samples not guaranteed in water-soluble ammonia equivalent of nitrogen, or about 7.83 percent of the total number of samples, 971. These 76 samples were distributed between 28 companies or subsidiaries, an average of less than three unguaranteed samples to each company but the Planters Fertilizer Company, Sumter, S. C., guaranteed less than one-half of their samples, or five out of nine.

Last season the 868 samples above referred to, were distributed between 69 companies, or subsidiaries, of which seven did not guarantee any of their samples, but only one of the seven was represented by more than one sample, and the total number of samples was eight. Twenty-five of the 69 companies guaranteed all of their samples, and the number of their samples amounted to 157. There were 115 samples not guaranteed, distributed between 36 companies, an average of a little over three unguaranteed samples to a company, and doubtless both this year and last the inspectors occasionally failed to note the water-soluble guarantee.

In the following table are given the names of the twenty-eight companies, or subsidiaries, who failed to guarantee the water-soluble ammonia equivalent of nitrogen in one or more samples. The first figure or figures represent the unguaranteed sample or samples, and the second figures the total number of samples received for analysis:

| | |
|---|------|
| Acme Mfg. Co., Wilmington, N. C. | 1-6 |
| A. A. Chemical Co., Columbia | 8-81 |
| American Fertilizing Co., Norfolk, Va. | 2-11 |
| Armour Fert. Works, Augusta, Ga. | 2-45 |
| Atlantic Fert. & Phos. Co., Savannah, Ga. | 2-11 |
| Boykin Chem. & Fert. Co., Baltimore, Md., | 2-2 |
| Dawhoo Fert. Co., Charleston | 1-11 |
| F. S. Royster Guano Co., Norfolk, Va. | 2-46 |
| Ga.-Fla. Fert. Co., Savannah, Ga. | 3-16 |
| International Guano Corp., Augusta, Ga. | 2-25 |
| Logan-Robinson Fert. Co., Charleston | 6-22 |
| Marion Fert. Works, Marion | 3-3 |
| Maybank Fert. Co., Charleston | 1-16 |
| Merchants Fert. & Phos. Co., Charleston | 6-28 |
| Mutual Fert. Co., Savannah, Ga. | 2-10 |
| McCabe Fert. Co., Charleston, | 2-6 |
| N. B. Josey Guano Co., Wilmington, N. C. | 4-4 |
| Nitrate Agencies Co., Wilmington, N. C. | 1-12 |
| Planters Fert. Co., Sumter, S. C. | 5-9 |
| Planters Fert. & Phos. Co., Charleston | 2-20 |
| Reliance Fert. Co., Savannah, Ga. | 3-14 |
| Savannah Guano Co., Savannah, Ga. | 3-18 |
| Southern Fert. & Chem. Co., Savannah, Ga. | 4-30 |
| Swift & Co., Columbia, S. C. | 3-35 |
| Tennessee Chemical Co., Nashville, Tenn. | 1-9 |
| V.-C. Chemical Co., Charleston | 2-87 |
| Westminster Oil & Fert. Co., Westminster | 1-2 |
| Wulbern Fert. Co., Charleston | 2-12 |

The total number of samples given in this table amount to 591, and the unguaranteed samples to 76, or 12.85 percent of unguaranteed samples.

In the following table are given the names of the forty-seven, all of whose samples received for analysis were guaranteed in water-soluble equivalent of nitrogen, together with the number of samples analyzed:

| | |
|--|----|
| Anderson Fert. Co., Anderson | 9 |
| Ashepool Fert. Co., Charleston | 4 |
| Banks Fert. Co., St. Matthews | 1 |
| Batesburg Fert. Co., Batesburg | 3 |
| Blue Belt Fert. Co., Savannah, Ga. | 8 |
| B. Gordon Pringle Co., Charleston | 1 |
| Carolina Chemical Co., Columbia | 13 |
| Catawba Fert. Co., Lancaster | 12 |
| Charleston Imp. & Forwarding Co., Charleston | 2 |
| Chatham Chemical Co., Savannah, Ga. | 7 |
| Chiquola Fert. Co., Anderson | 9 |
| Coe-Mortimer Co., Charleston | 18 |
| Conestee Chemical Co., Wilmington, N. C. | 5 |
| Congaree Fert. Co., Columbia | 13 |
| Darlington Guano Co., Columbia | 4 |
| Etiwan Fert. Co., Charleston | 11 |
| Fisheries Products Co., Wilmington, N. C. | 7 |
| Franklin Guano Co., Liberty | 1 |
| Georgia Chemical Works, Augusta, Ga. | 34 |
| G. Ober Sons Co., Augusta, Ga. | 9 |
| Greenville Cotton Oil Co., Greenville | 3 |
| Greenville Fertilizer Co., Greenville | 1 |
| Greer Guano Co., Greer | 3 |
| Hartsville Fert. Co., Hartsville | 13 |
| Independent Guano Co., Greenville | 4 |
| Kaminer & Neil, Columbia | 4 |
| MacMurphy Fert. Co., Charleston | 13 |
| Molony & Carter Co., Charleston | 16 |
| Morris Fert. Co., Atlanta, Ga. | 11 |
| Navassa Guano Co., Wilmington, N. C. | 11 |
| Neville Bros., West Union | 1 |
| Old Buck Guano Co., Richmond, Va. | 3 |
| Palmetto Guano Corp., Columbia | 1 |
| Peruvian Guano Corp., Charleston | 17 |
| Read Phos. Co., Charleston | 34 |
| Rock Hill Fert. Co., Rock Hill | 2 |
| Savannah Chem. Co., Savannah, Ga. | 5 |

| | |
|---|----|
| Sea Coast Fert. Co., Augusta, Ga. | 4 |
| Smith-Wilkinson Guano Co., Spartanburg | 2 |
| Southern Cotton Oil Co., Charleston | 18 |
| Southern States Phos. & Fert. Co., Savannah, Ga. | 11 |
| Sumter Fert. Mfg. Co., Sumter | 24 |
| Trenton Fert. Co., Trenton | 2 |
| Union Guano Co., Winston, N. C. | 2 |
| Wessel & Duvall Co., New York, N. Y. | 1 |
| Wilcox & Gibbes, Charleston | 1 |
| W. P. Nimmons & Co., Seneca | 2 |

The total number of samples given in this table amounts to 380, or 39.13 percent of the 971 samples examined.

The nitrogen availability standards for the coming season are the same as they have been for the past nine years, and are as follows:

1st. The Modified Street Neutral Permanganate Method is still in force.

2nd. An unmixed fertilizer material furnishing organic nitrogen must show an availability of 85 percent of the total organic nitrogen found on analysis.

3rd. The water-insoluble organic nitrogen in mixed fertilizers must show an availability of 75 percent by Street's method, if this water-insoluble organic nitrogen amounts to one-third or more of the total nitrogen found on analysis.

Of the 971 mixed fertilizers examined for watersoluble ammonia, 89 samples were found to contain water-insoluble organic nitrogen amounting to one-third or more of the total nitrogen found on analysis. All of these 89 samples were examined by Street's method, and were found up to the requirement of 75 percent availability. Last season there were 130 samples out of 868, and all found up to the requirement. The results this season indicate the shortage of organic ammoniates, noted for the past three or four years, still persists and to even a greater extent than before.

Farmers' Samples of Fertilizers:—In addition to the official samples of fertilizers collected by inspectors, there have been analyzed this season 175 samples for purchasers, as provided for in Section 17 of the fertilizer law, effective July 1st, 1920. This is nearly 20 percent more than were received for analysis last year.

Waters: Of the 58 samples of water listed, twenty-four were analyses of the College water supplies; thirty-one were sanitary analyses for citizens of the State; two were analyses of boiler waters for citizens of the State; and one a complete mineral analysis for a citizen.

Ores, Minerals, Etc.: Twenty-three samples of clays, micas, quartz, Iron, pyrites, etc., were received and examined this season as compared with twenty-eight last season.

Limestones, Marls, and Lime: Nine samples of materials of this nature were analyzed this season as compared with six last season.

Assays for Gold and Silver: Six samples were assayed this season, which is the same as last year.

Ashes (wood, etc.): Two samples this season as compared with six last year.

Miscellaneous: The thirty-four samples listed under this head consisted of: one each, mud for oil, hen house manure, fertilizer for source of potash only, soil for oil, water for oil, soft drink for alcohol; two each, fertilizers for sources of potash and ammonia only, diatomaceous earth; three each, fertilizer material for identification, lubricating oil (for J. P. Lewis); four samples of nitrate of soda from a burned building; six toxicological analyses in cases of suspected poisoning of human beings as provided for by law; eight samples of fertilizers for the Agronomy Division (C. P. Blackwell).

Distribution of the Work: The fertilizer analyses were made by Messrs. Robertson, Foy and Freeman. The samples were prepared for analysis by Mr. Freeman with the assistance of a helper in the grinding.

All of the nitrogen work, including total, water-soluble, and availability determinations, was done by Mr. Robertson.

With the exception of three samples of water analyzed by Mr. Foy, all of the water analyses were made by Mr. Freeman.

Mr. Freeman made the analyses of limestone and like materials, the assays for gold and silver, and the miscellaneous analyses, with the exception of one poison case by Professor Mitchell and the remaining five by Mr. Robertson.

It gives me pleasure to be able to say that all of the work has been faithfully and efficiently performed, and that a spirit of loyalty and co-operation has prevailed.

Respectfully,

R. N. BRACKETT, Chief Chemist

REPORT OF THE STATE CROP PEST COMMISSION

Acting President S. B. Earle,
Clemson College, S. C.

Dear Sir:

INTRODUCTORY

In summing up the work of the State Crop Pest Commission for the past year it is interesting to note the scope of this work in the State. Of the forty-six counties in the State, thirty-six were visited for some type of inspection service; hence there were only ten counties in which no inspections were made. Nursery inspections were made in nineteen counties, and cabbage and tomato inspections were made in sixteen counties. A total of 384 different plantings were inspected during the year. When it is realized that in a large number of cases each planting required two or three inspections, it is readily appreciated that an enormous volume of work is involved.

As in past years the work of this Commission has been educational in nature, and we have proceeded along co-operative lines with the growers of the State. We feel that the people generally realize more and more that the efforts of this Commission are helpful rather than coercive in nature, and that our efforts are intended to promote their welfare and are all for their protection.

INTER-STATE NURSERY QUARANTINE

The inter-state movement of nursery stock, as in previous years, is still of first importance in South Carolina due to the fact that the nursery industry in this State has not yet developed sufficiently to supply the demands. During the past season, however, much interest was taken in the development of the home industry as may be seen from the following figures. In 1921-22, there were only 23 nursery inspections, while in 1923-24 they had increased to 53; an increase of nearly 100 percent.

In order to give the purchasers of nursery stock within the State effective protection against fraud and misrepresentation by nurserymen living outside of the State, the Commission made an amendment permitting nurserymen who so desire, to appoint a suitable proxy in this State upon whom service of process may be served. Purchasers of nursery stock residing in South Carolina who desire such protection will be furnished upon request, a list of out-of-state nurseries who have appointed proxies in this State.

In addition to the above the Commission requires, as in previous years, the filing in this office by the nursery company, at the end of each day's business, a duplicate invoice of the nursery stock shipped, together with the number of the South Carolina permit tag used. Be-

fore permits for the shipment of nursery stock into South Carolina are issued, this Commission requires every out-of-state nursery to file a certificate stating that the nursery stock and premises have been inspected by an authorized inspector of the State of origin and found free of dangerous insects and plant diseases. The value of the filing in this office of duplicate invoices was very well demonstrated last season when we were notified that certain nurseries in New Orleans had become infested with a dangerous scale insect known as the Camphor Scale, which was not known to occur in South Carolina. These nurseries, not knowing that their plants were infested, had shipped infested stock into various states. In order to locate the infested trees thus shipped into this State, we merely looked over our invoices from these particular nurseries and determined when and where this stock had been delivered in South Carolina.

Thorough inspections were immediately made of the twenty-two properties to which this stock had been shipped to ascertain if this insect had become established in South Carolina. This is of particular importance when we realize the number of dangerously injurious insects and diseases in other states and countries that have not yet become established in South Carolina.

As far as possible, with the limited inspection force at hand, we have made inspections of the larger shipments of nursery stock coming into this State when they reached their destination and in several instances stock infested with diseases or insects prohibited by the Commission has been either destroyed or returned to the shipper. So far we have received splendid co-operation from the out-of-state nurserymen, in spite of the fact that they have numerous rules and regulations of the various states to contend with. It is to be hoped that it will be possible in the near future to formulate a standardized code of nursery inspection regulations that will be suitable for all sections of the country. This question is now before the Southern Nurserymen's Association and the quarantine officials of the various States..

During the season just closed this Commission issued 23,510 permits to out-of-state nurseries, representing 113 companies, distributed over the southern, northern, and mid-western states. Most of the shipments came from New York, Ohio, Tennessee, and Mississippi.

INTRA-STATE NURSERY QUARANTINE

Though South Carolina is still young in the nursery business marked interest has developed during the past several years, and especially during the past season. Several new nurseries have been added to our list. It is true that most of these nurseries are small, but they are endeavoring to produce good stock and their importance can readily be appreciated when we recall that in the past South Carolina produced none of her own nursery stock. The policy of the Com-

mission has been, and still is, to give these nurserymen, however small, every assistance possible and encourage the production of home grown stock. It often happens that where a nursery is partially infested with some insect or disease the distribution of which cannot be definitely determined at the time of the regular inspection, we provide for an inspector to be on the grounds at digging time and prescribe methods of treatment or otherwise advise methods that will entail as little loss as possible to the growers. We realize that the Crop Pest service is based on a partnership between the people of South Carolina and the State Crop Pest Commission, and we continually work toward this end.

The Commission requires that every nursery and greenhouse be inspected once a year or as many more times as the Commission may deem necessary in order to safely prevent the distribution and spread of injurious insects and diseases. The home nurserymen as well as the inter-state shippers, are required to file in this office at the end of each day's business a duplicate invoice with the number of the South Carolina permit tag used, and at the end of the season to return all unused tags. During last season 17,206 permit tags were issued to nurserymen of this State. Fifty-three properties were inspected for nursery stock alone for the season 1923-24 which number is considerably greater than the previous season. Many of these, especially the larger nurseries, received two or more inspections. As a whole the stock is comparatively clean, our greatest trouble being with Crown Gall and Root Knot caused by nematodes. Nurseries located in the sandy sections of the State are especially liable to be infested with the latter.

A new source of inspection that developed during the past season and one which required a great deal of attention from the inspection service was the shipment of what we have termed "home plants." These plants are grown by people who are not regular nurserymen, but who have a great many old time plants and flowers growing in their yards and about their houses. These plants are readily disposed of when advertised through the weekly market bulletin published by the State Department of Agriculture, and many of these growers take in as much as \$25.00 to \$100.00 a year; this money coming in at a season when there is very little else salable. In order to leave the margin of profit for the growers as great as possible the Commission issues to these people stickers or labels stating that this stock has been inspected by an authorized inspector. These labels sell for 35 cents per hundred and are used for parcel post shipments only.

SWEET POTATO QUARANTINE

The Commission's campaign against destructive sweet potato diseases has been prosecuted vigorously during the past season and is becoming

ing of greater importance each season. The regulations require that before sweet potatoes for seed purposes or the plants for putting out can be sold within or shipped into this State they must have at least three inspections, the field inspection—before the potatoes are dug and before frost kills the vines, is known as the first inspection and is made primarily for the purpose of detecting stem-rot, or wilt or any other disease that might be present. The second inspection is made during storage and is made for black-rot and other storage diseases and for any evidence of infestation by sweet potato weevils. The third and last inspection, or bed inspection, is made in the spring after the plants come up, for the purpose of detecting any diseases that might be present on the plants.

During the second inspection instructions are given the grower in regard to the proper way of bedding and disinfecting the potatoes to further limit the chance of infection. Prior to the promulgation of these regulations most of the sweet potato plants sold in this State came from other southern States and in many cases destructive diseases were transported into this State. Under such conditions there was great risk of introducing the sweet potato root borer, the most serious enemy of the sweet potato. We have continued to tighten up on this quarantine until we have reached the point where some of our neighboring States have practically stopped shipping plants into South Carolina, though Georgia still makes quite a few shipments. This has enabled our growers to better compete with growers in other States who formerly dominated the market because of their great advantage of placing plants on the market a couple of weeks before our plants were ready. The inspectors last season made sixty-five (65) inspections for sweet potatoes alone and issued a total of 13,531 permit tags. After the third inspection is made a full report of all three inspections is forwarded to the grower together with certificate of inspection. A copy of the report is also filed in this office. Before permit tags are issued for the shipment of sweet potatoe plants into South Carolina, the growers in other States must file with this office a duplicate copy of certificate of their State authorities stating that their plantings have had at least three inspections and have been found free of insects and diseases.

Through news articles county agents, sweet potato associations, and other available sources, we have kept the people advised as to the necessity of purchasing only sweet potato plants which have been certified by the State Crop Pest Commission or authorized Plant Board of other States.

Cabbage and Tomato Regulations

We have continued the inspection of cabbage and tomato plants grown for sale and distribution in this State in order to prevent as much as possible the spread of dangerous diseases affecting these crops

which are not now prevalent in this State. Inspection of cabbage and tomato plants is also required of other States before such plants are shipped into South Carolina. On account of the number of small orders in which these plants are often shipped it was found that it was not practical to use the regular permit tags or to attach the labels which are used for parcel post shipments. To meet this situation the Crop Pest Commission issued rubber stamps on which was just sufficient wording to signify that these plants had been inspected by an inspector of the Commission. These rubber stamps are numbered consecutively as issued and a record of them kept in this office. It is necessary that two inspections be made for most of the cabbage plant growers, namely, one for the fall shipment of plants and one for the spring shipment, which entails considerable service.

Pests of Other States

The approach of the most serious pest in other states is continually being watched and every effort is being made by the commission to keep them out of South Carolina.

Sweet Potato Root Borer: In the eradication of the sweet potato root borer the inspection services of the various States and of the Federal Government are co-operating. This is the most serious enemy of the sweet potato and the annual loss caused by this insect has been estimated at \$3,500,000.00. Fortunately it has not become established in our State and it is of greater importance to our growers that we prevent its being introduced. Our efforts along this line have already been noted elsewhere in this report. The work of eradicating this pest in other States is making satisfactory progress. The root borer now occurs in the southern parts of Florida, Alabama, Mississippi, and Louisiana and in eastern and southern Texas. It previously occurred in Baker County, Florida, and Charlton County, Georgia. The latter infestation gave us greatest concern because this represented the nearest approach of this pest to South Carolina. It appears now that eradication work in these two counties has been successful.

European Corn Borer: This pest was first found in the United States near Boston in 1917. It is now known to occur in Maine, New Hampshire, Vermont, Rhode Island, New York, Ohio, Pennsylvania and Michigan, and there is a large area infested in Canada. It is regarded as one of the most destructive pests of this country and its invasion from the north is being relentlessly contested. At present its spread seems to be mostly northward, but there is danger at any time of its introduction into South Carolina, and careful watch is being kept on the movements of its host plants from infested territory. This Commission, co-operating with the Federal Government, prohibits the shipment into South Carolina of any of the host plants from territory infested by the European Corn Borer, unless these materials have been so processed as to make them safe from infestation.

Besides the clean up work which the various States are doing, marked progress has also been made in the introduction of parasites from Europe.

The Japanese Beetle is apparently one of the most serious pests ever introduced into the United States. It was first discovered in Burlington County, New Jersey, in 1916 and has since been spreading rapidly. It now covers a large area in New Jersey and Pennsylvania, and several counties in Delaware. It has a wide range of food, having been found on more than 200 species of plants. This pest is injurious in both the adult and grub stage. The South Carolina State Crop Pest Commission in co-operation with the Federal Horticultural Board is making every effort to prevent the shipment from infested areas of any products which might carry any stage of this pest. At present the crop Pest Commission has no specific regulations against this pest, other than those adopted by the Federal Horticultural Board. It is believed that these regulations are stringent enough to safe guard the interest of this State.

Pink Boll Worm is probably the most serious insect pest of cotton. A native of Egypt, it was first found in the United States at several points in Southeastern Texas in the fall of 1917. Other infestations were later found in Southeastern Louisiana and Western Texas. In 1920 the pest was discovered at Carlsbad, New Mexico, and also near Shreveport, Louisiana. In 1921 two other Texas counties were found infested. No new infestations have been found since 1921. State and Federal efforts have been directed toward the eradication of this pest and the splendid co-operation established between this Board and the various States is being continued. The progress from year to year made against the eradication of this pest has been recorded in previous reports. At present it seems as if the Pink Boll Worm from the splendid eradication work done by the Federal Government in co-operation with the various states will be stamped out of the United States. This pest is now only known to occur in the Big Bend district in Texas, and this year's report shows that the infested fields have been reduced nearly two-thirds, only 13 infested fields having been found through September 30th of this year.

This constitutes one of the most important pieces of entomological quarantine and eradication ever undertaken, and should convince one of the efficiency of quarantine service when properly administered. Every person when he stops to think of the disastrous results of the cotton crop that this insect could cause if established, should be able to fully realize the necessity and importance of insect prevention.

Japanese Camphor Scale. This pest was discovered in New Orleans in 1920 and has since been found in Alabama near Mobile, and in Texas near Houston. Its native home is Japan and except for the few infestations in the United States is not known to occur anywhere else in the world. During the fall of 1923 it was found that nursery

stock shipped from nurseries located near New Orleans, prior to the finding of the infestation of Camphor Scale, had been shipped to various places in South Carolina. This stock was shipped to twenty-two properties in South Carolina in widely separated localities. As soon as this was discovered thorough inspections were made of every plant coming from these infested nurseries. So far we have found no evidence of this insect having been introduced. It is probably fortunate that a great many of these plants succumbed to the sudden cold weather that we had last winter. Nearly 200 species of plants are attacked by this insect including citrus, rose, Japanese, persimmon, fig, camphor, and many other fruit and ornamental trees. It is regarded by entomologists as a pest of major importance.

The Oriental Peach Moth is supposed to have reached the United States from Japan prior to the plant quarantine Act of 1912. It is now widely distributed in the Atlantic Coast States occurring in Virginia, Connecticut, New York, District of Columbia, New Jersey, Delaware, Maryland, and Pennsylvania, with outlying infestations in Georgia, Alabama, and Tennessee. It is already doing considerable damage in the commercial peach growing sections. We have not yet definitely found the Oriental Peach Moth in South Carolina though we have found injury typical of the pest in certain districts of this State. Every effort is being made to locate infestations, should they occur, so that proper methods of control or eradication may be undertaken immediately.

A Recently Introduced Pest

The Mexican Bean Beetle entered the north-western corner of our State with a most threatening aspect in the summer of 1922. It was then feared that it might spread rapidly over the entire state and do considerable damage to beans in our main trucking sections. It now appears, however, that this pest thrives best in high altitudes, consequently it has not spread far beyond the foot-hills, and the spread southward this year in South Carolina has been comparatively slight. It has spread rapidly northward in the United States and appears in Kentucky, Tennessee, North Carolina, Ohio, Virginia, and Pennsylvania. In this State the attacks of this pest have occurred mainly on snap beans, and lima beans, on which it has been very destructive in the Piedmont section. It is known, however, to feed on many of the other leguminous crops. During the last season the Commission was repeatedly called upon to make inspections and certification so that shipments of snap beans could be made to Florida.

Bee Disease Act

There is not at this time any of the destructive brood diseases within our borders. In order to prevent the introduction into South Carolina of dangerous brood diseases of bees that occur in many of

our neighboring States, and in order to protect the rapidly developing bee industry in our State there became effective April 15, 1922 regulations prohibiting the shipment into this State of any bees or bee hives or bee-keeping fixtures of any kind unless accompanied by an unexpired permit of the South Carolina State Crop Pest Commission.

The importance of these regulations was demonstrated last season when a car-load of bees, and bee-keeping appliances were shipped from a neighboring State, and from territory that had been infested with foul brood. If this had not been dealt with immediately there might now be an infestation in this State. As soon as this carload of bees and fixtures was landed within our State and after an investigation, and the facts learned, the shipper was given one of two options, namely, either ship them back immediately or have them confiscated and destroyed. He preferred the former. Every possible safeguard is thrown around our bee yards throughout the State, especially the queen rearing yards, with the view of preventing the introduction and spread of these diseases.

The Insecticide and Fungicide Act

The General Assembly two years ago created an act to regulate the sale and distribution of insecticides and fungicides within the State of South Carolina and delegated the administration of this act to the South Carolina State Crop Pest Commission.

Probably the most important work done under this act since its passage has been the preventing of inferior or below-standard calcium arsenate from reaching the farmers. The law states specification for calcium arsenate as to density and arsenic content and that the material can be tested free of charge by sending samples to this Commission. Numerous samples collected either by agents of the Commission or sent in by parties throughout the State were examined in the laboratory of the State Chemist. During last season 70 samples of calcium arsenate were tested and only 6 were found to be either low in density or in arsenic content. From previous experience, however, it was found that the dustibility does not always correlate with the results obtained by the use of generally recognized methods for determining density. Therefore, before any material was condemned a thorough test was made for dustibility through an approved dusting machine. As a result of the activities of this Commission, it was quite noticeable that the quality of calcium arsenate during the past season was much superior to that obtained in previous seasons and not a single case brought to the attention of the Crop Pest Commission had to be condemned.

Respectfully submitted,

H. W. BARRE, State Pathologist.

F. H. LATHROP, State Entomologist.

REPORT OF STATE VETERINARIAN

Prof. S. B. Earle, Acting President,
Clemson College, S. C.

Dear Prof. Earle:

I have the honor of submitting herewith a report of the Clemson College Livestock Sanitary Department and bureau of Animal Industry, U. S. Department of Agriculture, cooperating, in the State of South Carolina for the period from January 1, 1924, to October 31, 1924, inclusive.

While it is generally understood that our major functions are Tick Eradication, Tuberculosis Eradication and Hog Cholera Control, yet we are also charged with the protection of the livestock industry of the State from all contagious and infectious diseases and in order that a clearer conception may be had of our activities in general we will briefly outline same under appropriate heading as follows:

TICK ERADICATION

The tick infested areas are still confined to the coastal plain counties. The work was vigorously prosecuted in all infested areas during this season, with the exception of Berkeley County and the north-eastern portion of Charleston County, and splendid results were obtained. The few infested premises that will remain in each county after the close of the season will be kept under close supervision to prevent, so far as possible, a spread of infestation during the winter months. The pernicious habit of livestock owners, however, in turning their cattle at large during the winter months is a great menace and makes it necessary to re-work large areas each year until the final completion of the work.

Owing to the lack of cooperation on the part of the cattle owners and representative citizens the entire areas of Berkeley County and the north-eastern portion of Charleston County were placed under Federal and State quarantine, May 15, 1924. It is hoped that the conditions in the requarantined areas will warrant the reestablishment of the work next spring.

The benefits derived from Tick Eradication are so apparent it is needless to dwell upon that phase of the work. It is sufficient to state that Tick Eradication has made and is making it possible for the safe importation of purebred and high grade cattle of both dairy and beef types, the consequent improvement of our native cattle and the establishment of an industry that will ultimately become one of our leaders.

TUBERCULOSIS ERADICATION

Tuberculosis Eradication is one of our most important projects not only from an economic point of view but from a public health standpoint as well, and is conducted in all sections of the State on request of the cattle owners. All of the principal breeding and dairy herds in the State have been tested under our supervision since the inauguration of the work and each year shows a decrease in the number of reactors found over the previous year, indicating that bovine tuberculosis is being eradicated from our herds.

While the "Accredited Herd" plan of testing is being followed, yet we have done a great amount of community testing during the past year and hope to be in position to take up the "Area" plan in the near future. By "Area" plan we mean, taking each county as a unit and applying the test to all cattle in the county.

During the past year the tuberculin test was applied to a total of 1533 herds containing 15693 cattle, 76 of which reacted to the test and were disposed of in accordance with the State and Federal laws.

At the close of October 31, 1924, we have a total of 182 Accredited Herds with 5821 cattle; 763 herds containing 7724 cattle that have passed one free test and a total of 4643 herds and 26070 cattle under supervision.

HOG CHOLERA CONTROL

As for the past several years hog cholera outbreaks are most prevalent in the southern and eastern sections of the State, especially in those counties where there are large swamp areas and the farmers permit their hogs to run at large for a greater part of the time. There has been a very marked decrease, however, in the number of outbreaks during the past year as compared to former years and even the previous year, as well as a great decrease in the number of hogs given the preventive treatment. It is regretted that the farmers do not give more attention to the preventive inoculation of their hogs, instead of postponing the treatment until there is an outbreak of cholera on their premises or in their vicinity. This apparent neglect will no doubt be a cause for an increased number of outbreaks during the fall and winter months.

OTHER DISEASES

As previously stated this Department is charged with the protection of the livestock industry of the State from contagious and infectious diseases. In fulfilling our duty we investigate many conditions that are or appear to be of a contagious or infectious nature, and outline treatment or control measures for same.

During the past year our activities in this respect are summarized as follows:—

| | |
|--|-------|
| Number of diseases investigated in cattle | 136 |
| Number of diseases investigated in swine | 436 |
| Number of diseases investigated in horses and mules | 71 |
| Number of diseases investigated in goats and sheep | 3 |
| Number of diseases investigated in dogs | 14 |
| Farm or premises visited in making investigations | 3744 |
| Interviews with farmers or others on matters pertaining to livestock sanitary work | 12393 |
| Miles traveled by rail in answering calls | 41909 |
| Miles traveled by other means in answering calls | 70825 |

Numerous investigations are made through our Laboratory Division and will be discussed under that heading. We also suggest treatment for various conditions in all classes of livestock by letters and through the medium of bulletins, pamphlets, etc.

LABORATORY SERVICE

A wonderful service is being rendered the livestock industry of our State through our Laboratory, which enables us to make correct diagnoses of many conditions that could not be done otherwise, and suggest rational methods of treatment.

During the past year 1557 specimens were received for examination from all sections of the State and from all classes of livestock and poultry. The number from each class is summarized as follows:—

| | |
|------------------------|------|
| Cattle | 678 |
| Chickens | 566 |
| Swine | 97 |
| Sheep | 84 |
| Dogs | 54 |
| Horses and Mules | 48 |
| Pigeons | 14 |
| Turkeys | 11 |
| Cats | 2 |
| Pheasants | 1 |
| Rabbits | 1 |
| Goats | 1 |
| Total | 1557 |

SERUM, VIRUS AND BIOLOGICS DISTRIBUTION—

We are equipped for and carry in stock at all times an ample supply of anti-hog cholera serum, hog cholera virus and other veterinary biologics used as preventive treatments in various conditions, that are sold to the livestock owners at cost, thus effecting a saving to them of several thousands of dollars annually.

During the past year we have shipped the following:—

| | Mils | Value |
|------------------------------|--------------|--------------------|
| Anti-hog cholera serum | 2,202,750 | \$22,027.50 |
| Hog Cholera virus | 133,975 | 1,339.75 |
| Other biologics | 12,734 doses | 2,970.87 |
| Total | | \$26,338.12 |

DEPUTY STATE VETERINARIANS

In order that the greatest service possible may be extended the livestock owners, in addition to our regular force of veterinarians, several of whom are located at strategic points in the southern and eastern portions of the State, we have commissioned twenty-five of the practicing veterinarians as Deputy State Veterinarians to assist us when their services are required. They are located at various points in the eastern, northern, western and central portions of the State. This arrangement has proven very satisfactory for it enables us to render a prompt and efficient service which is our greatest desire.

NEW REGULATIONS

Effective June 1, 1924, a regulation was promulgated and adopted entitled, "Regulation Governing the Importation of Cattle and Swine, for Breeding Purposes, into the State of South Carolina." This regulation in effect is for the prevention of the importation of cattle and swine infected with the condition known as infectious or contagious abortion. Although this regulation has been in effect a comparatively short time yet the benefits derived are very apparent.

TICK ERADICATION

U. S. Bureau of Animal Industry Expenditures

| | Salaries | Incidentals | Total |
|---------------------------|-----------------|--------------------|--------------|
| July 1, 1923. to | | | |
| June 30, 1924, inclusive— | \$40,310.71 | \$9,845.60 | \$50,156.31 |

Salaries: Expenditures under this heading include salaries of supervising veterinarians, a clerk and agents in tick eradication.

Incidentals: Expenditures under this heading include traveling expenses of supervising veterinarians, agents in tick eradication, and maintenance of office in Columbia, S. C.

LIVESTOCK SANITARY WORK

U. S. Bureau of Animal Industry Expenditures

| | Salaries | Incidentals | Total |
|--------------------------|-----------------|--------------------|--------------|
| July 1, 1923. to | | | |
| June 30, 1924, inclusive | \$10,691.89 | \$3,829.41 | \$14,521.30 |

Salaries: Expenditures under this heading include salaries of four veterinary inspectors and one clerk.

Incidentals: Expenditures under this heading include traveling expenses of veterinary inspectors, office rent, telephone charges, etc.

TICK ERADICATION

U. S. Bureau of Animal Industry Expenditures

| | Salaries | Incidentals | Total |
|-----------------------------|-------------|-------------|-------------|
| January 1, 1924, to | | | |
| October 31, 1924, inclusive | \$22,625.18 | \$9,302.08 | \$31,927.26 |

Salaries: Expenditures under this heading include salaries of supervising veterinarians a clerk, and agents in tick eradication, also maintenance of office in Columbia, S. C.

TICK ERADICATION

State Expenditures

| | Salaries | Incidentals | Total |
|-----------------------------|-------------|-------------|-------------|
| January 1, 1924, to | | | |
| October 31, 1924, inclusive | \$15,318.16 | \$2,133.41 | \$17,451.57 |

Salaries: Expenditures under this heading include salaries of cattle inspectors and one clerk.

Incidentals: Expenditures under this heading include chemicals (for preparing arsenical solution to disinfect cattle), utensils and containers for same, printing regulations, quarantine and permit books, traveling expenses, etc.

LIVESTOCK SANITARY CONTROL WORK

U. S. Bureau of Animal Industry Expenditures

| | Salaries | Incidentals | Total |
|-----------------------------|------------|-------------|-------------|
| January 1, 1924 to | | | |
| October 31, 1924, inclusive | \$8,946.83 | \$3,247.21 | \$12,194.04 |

Salaries: Expenditures under this heading include salaries of four veterinary inspectors and one clerk.

Incidentals: Expenditures under this heading include traveling expenses of employees, office rent, telephone rent, etc.

LIVESTOCK SANITARY CONTROL WORK

State Expenditures

| | Salaries | Incidentals | Total |
|-----------------------------|-------------|-------------|-------------|
| January 1, 1924 to | | | |
| October 31, 1924, inclusive | \$30,947.16 | \$11,191.43 | \$42,138.59 |

Salaries: Expenditures under this heading include salaries of veterinarians and assistants to veterinarians.

Incidentals: Expenditures under this heading include traveling expenses of employees, office rent, telephone and telegraph charges, office supplies, other supplies, etc.

EXPENDITURES FOR TICK ERADICATION IN SOUTH CAROLINA

The following statement shows expenditures from various sources from 1907 to October 31, 1924:

| Year | U.S. Dept. of Agri. | Clemson College | State Appropriation | County Appropri'n |
|--------------------|------------------------|--------------------|------------------------|----------------------|
| 1907 | \$ 5,125.00 | \$ 1,860.00 | ..... | ..... |
| 1908 | 15,207.00 | 4,535.00 | ..... | ..... |
| 1909 | 19,367.00 | 8,524.00 | ..... | ..... |
| 1910 | 15,915.00 | 9,960.00 | ..... | ..... |
| 1911 | 12,674.00 | 10,051.00 | ..... | ..... |
| 1912 | 14,537.00 | 8,308.00 | ..... | ..... |
| 1913 | 16,146.00 | 9,369.00 | ..... | \$1,083.00 |
| 1914 | 23,143.00 | 1,497.00 | \$29,994.31 | ..... |
| 1915 | 35,479.84 | ..... | 29,999.99 | ..... |
| 1916 | 38,598.72 | ..... | 30,000.00 | ..... |
| 1917 | 64,811.65 | ..... | 30,000.00 | ..... |
| 1918 | 74,102.77 | ..... | 29,997.50 | ..... |
| 1919 | 63,947.29 | ..... | 30,000.00 | ..... |
| 1920 | 35,650.36 | ..... | 20,000.00 | ..... |
| 1921 | 36,802.79 | ..... | 19,978.68 | ..... |
| 1922 | 50,290.34 | ..... | 19,669.61 | ..... |
| 1923 | 43,553.83 | ..... | 19,687.53 | ..... |
| 1924 | 31,927.26 | ..... | 17,451.57 | ..... |
| (To Oct. 31) ..... | ..... | ..... | ..... | ..... |
| Total | \$597,278.85 | \$54,104.00 | \$276,779.19 | \$1,083.00 |

LIVESTOCK SANITARY CONTROL WORK

The following statement shows expenditures from the year 1918 to October 31, 1924, inclusive:

| Year | U. S. Dept of Agri. | State Appropriation | Total |
|------------------------------|------------------------|------------------------|--------------|
| 1918 | \$ 3,243.81* | \$ 4,395.11 | \$ 7,638.92 |
| 1919 | 7,418.80* | 9,954.56 | 17,373.36 |
| 1920 | 13,325.56 | 30,000.00 | 43,325.56 |
| 1921 | 15,596.24 | 48,985.51 | 64,581.75 |
| 1922 | 16,725.02 | 47,538.94 | 64,263.96 |
| 1923 | 16,958.33 | 49,160.18 | 66,118.51 |
| 1924 (to October 31st) | 12,194.04 | 42,138.59 | 54,332.63 |
| Total | \$85,461.80 | \$232,172.89 | \$317,634.69 |

*These amounts do not include the U. S. Department of Agriculture's expenditures in hog cholera work in South Carolina for the year 1918, or the first nine months in 1919, as this office has no record of the expenditures made by the U. S. Department of Agriculture for hog cholera control work in South Carolina prior to October 1, 1919.

FORCE IN LIVESTOCK SANITARY WORK

(Paid jointly by State of South Carolina and U. S. Dept. of Agriculture)

| Name: | Title: | Address |
|-----------------------------|---|-------------------------|
| W. K. Lewis | Inspector in Charge and State Veterinarian | Columbia, S. C. |
| L. S. Baer | Junior Veterinarian | Columbia, S. C. |
| C. W. Chapin | Junior Veterinarian | Beaufort, S. C. |
| P. J. Gallagher | Asst. Veterinarian | Columbia, S. C. |
| Clarke Hedley | Asst. Veterinarian | Conway, S. C. |
| E. E. Lent | Asst. Veterinarian | Columbia, S. C. |
| E. J. Meixel | Asst. Veterinarian | Charleston, S. C. |
| J. R. Ulrich | Junior Veterinarian | Columbia, S. C. |
| M. L. Boyd | Asst. State Veterinarian | Walterboro, S. C. |
| H. S. Brundage | Asst. State Veterinarian | Georgetown, S. C. |
| E. T. Fisher | Asst. State Veterinarian | Columbia, S. C. |
| H. B. Hood | Asst. State Veterinarian | Kingstree, S. C. |
| R. A. Mays | Asst. State Veterinarian | Columbia, S. C. |
| W. D. McCormack | Asst. State Veterinarian | Conway, S. C. |
| J. H. Rietz | Asst. State Veterinarian | Columbia, S. C. |
| S. D. Shoulkin | Asst. State Veterinarian | Allendale, S. C. |
| S. M. Witherspoon, Jr. | Asst. State Veterinarian | Marion, S. C. |
| J. H. Yarborough, Jr. | Asst. State Veterinarian | Denmark, S. C. |
| R. K. Donly | Clerk. | Columbia, S. C. |
| George Smith | Clerk. | Columbia, S. C. |
| Margaret Robertson | Assistant Clerk | Columbia, S. C. |
| William Bivens | Asst. to Veterinarians | Ravenel, S. C. |
| C. M. Dempsey | Asst. to Veterinarians | Beaufort, S. C. |
| E. E. Easterlin | Asst. to Veterinarians | Early Branch, S. C. |
| R. B. Hills | Asst. to Veterinarians | Edisto Island, S. C. |
| G. W. Hill | Asst. to Veterinarians | Ridgeville, S. C. |
| J. C. Kinsey | Asst. to Veterinarians | Awensdew, S. C. |
| J. W. Langdale | Asst. to Veterinarians | Beaufort, S. C. |
| J. D. Limehouse | Asst. to Veterinarians | Summerville, S. C. |
| Theodore Malphrus | Asst. to Veterinarians | Ridgeland, S. S. |
| J. P. Raymond | Asst. to Veterinarians | Hardeeville, S. C. |
| J. E. Riley | Asst. to Veterinarians | Okatie, S. C. |
| E. H. Walpole | Asst. to Veterinarians | Johns Island, S. C. |
| F. H. Worthington | Asst. to Veterinarians | Frogmore, S. C. |
| E. E. Wyndham | Asst. to Veterinarians | Bonneau, S. C. |
| W. M. Barnwell | Agt. Tick Eradication | Yonges Island, S. C. |
| J. M. Boyd | Agt. Tick Eradication | Conway, S. C. |
| G. S. Cuthbert | Agt. Tick Eradication | Summerville, S. C. |
| H. L. Easterlin | Agt. Tick Eradication | Early Branch, S. C. |
| J. E. Gillis | Agt. Tick Eradication | Kingstree, S. C. |
| J. C. Hoats | Agt. Tick Eradication | Walterboro, S. C. |
| E. J. Jenkins | Agt. Tick Eradication | Edisto Island, S. C. |
| Wade H. Jones | Agt. Tick Eradication | Manning, S. C. |
| M. B. Marvin | Agt. Tick Eradication | Beaufort, S. C. |
| V. E. McCormack | Agt. Tick Eradication | Ridgeland, S. C. |
| S. H. Williams | Agt. Tick Eradication | Georgetown, S. C. |
| A. M. Addison | Cattle Inspector. | Walterboro, S. C. |
| J. O. Ackerman | Cattle Inspector. | Cottageville, S. C. |
| W. E. Baker | Cattle Inspector. | Kingstree, S. C. |
| D. E. Benton | Cattle Inspector. | Walterboro, S. C. |
| M. V. Cox | Cattle Inspector. | Hemmingway, S. C. |
| S. P. Elliott | Cattle Inspector. | Gallivants Ferry, S. C. |
| E. W. Goodwin | Cattle Inspector. | Ritter, S. C. |

| | | |
|--------------------------|------------------------|-------------------------|
| H. C. Gore | Cattle Inspector. | Long, S. C. |
| J. M. Hoats | Cattle Inspector. | Walterboro, S. C. |
| P. C. Jayroe | Cattle Inspector. | Georgetown, S. C. |
| L. C. Lachicotte, Jr.... | Cattle Inspector. | Loris, S. C. |
| Robert Limehouse | Cattle Inspector. | Ridgeville, S. C. |
| R. C. Mitchum | Cattle Inspector. | Trio, S. C. |
| W. D. Mobley | Cattle Inspector. | Morrisville, S. C. |
| J. M. Rowell | Cattle Inspector. | Bluffton, S. C. |
| W. T. Rowell | Cattle Inspector. | Nichols, S. C. |
| W. W. Scouter | Cattle Inspector. | Daufuskie Island, S. C. |
| W. M. Thompson | Cattle Inspector. | Gresham, S. C. |
| W. C. Walker | Cattle Inspector. | Pritchardville, S. C. |
| H. A. Wheeler | Cattle Inspector. | Trio, S. C. |
| R. O. Williams | Cattle Inspector. | Gresham, S. C. |
| *J. M. Leaphart | Clerk. | Columbia, S. C. |
| *J. E. Wilson | Clerk. | Columbia, S. C. |

*J. E. Wilson and J. M. Leaphart, clerks, are paid out of Hog Cholera Control Reinvestment Funds.

Respectfully submitted

W. K. Lewis

Inspector in Charge and State Veterinarian.

REPORT OF THE AUDITOR.

Hon. W. W. Bradley,
State Bank Examiner,
Columbia, South Carolina.

Sir:—

Pursuant to instructions, I have audited the books, vouchers and accounts of Clemson Agricultural College, Clemson College, South Carolina, as to receipts and disbursements, of the fiscal year ended June 30, 1924.

Dated at Columbia, South Carolina, this first day of December A. D. 1924.

Report herewith

Respectfully submitted,

LOUIS A. SEARSON
Certified Public Accountant.

GENERAL REPORT OFFICE OF COLLEGE TREASURER

(Mr. Samuel W. Evans)

General Comments:

In the report of my audit covering the transactions, through the office of Treasurer, for the year ended June 30, 1923, I referred to the transfer of funds by the Treasurer to Mr. E. B. Elmore (Chief Accountant in the office,) on account of the Treasurer's temporary absence. The acting Treasurer was in charge of the department for several months and I beg to report that the business of the College was, apparently, carried on in a very satisfactory manner during this period. The Treasurer (Mr. Samuel W. Evans) has since returned and all funds have been accurately accounted for.

It is interesting to note that the Treasurer has inaugurated a plan to secure all college funds on deposit. I find that the banks are now required to furnish sufficient security to insure the College Treasury against loss in case of the failure of any banking institution with which an account is carried. All banks balances fully secured, either by indemnity bond or by adequate high grade collateral. I understand that Mr. Evans has been working to this end for several years and I believe that the plan should be highly commended as a definite future policy.

In a former report I called attention to the elaborate system of keeping the inventories of college property. I find that this system is still carried on in the same efficient manner. All supplies, materials, machinery, apparatus, equipment and property of every description are listed in detail, at carefully appraised value, and the inventories are kept in convenient form for ready reference.

The property owned by the College under date of June 30, 1924, is valued at between \$2,000,000.00 and \$3,000,000.00. During the twelve months ended June 30, 1924, the expenditures for additions to property amounted to about \$141,000.00. Of this amount, the sum of \$28,280.00 was used in the purchase of new equipment and apparatus, while the expenditure for permanent improvements was approximately \$112,700.00—the sum of \$45,000.00 representing the investment in new barracks—about \$35,000.00 an addition to the chapel new toilets costing something over \$17,700.00 and about \$15,000.00 was expended for other improvements. The records in the Treasurer's office show that such expenditures were made from the following funds, to wit:

Equipment:

| | |
|----------------------------|-------------|
| General College Fund | \$17,901.76 |
| Revolving Fund | 2,454.95 |
| Cadet Fund | 7,927.59 |
| | <hr/> |
| | \$28,284.30 |

Permanent Improvements:

| | |
|----------------------------|-------------|
| General College Fund | \$89,829.27 |
| Revolving Fund | 22,911.71 |
| Cadet Fund | None |
| | <hr/> |

\$112,740.99

Special Reference:

At the direction of Acting President S. B. Earle, I have made an examination as to records kept by the Mess Officer and as to the stores, purchases, etc., in this department. I beg to report, in this connection, that I have carefully examined the bills for provisions which are filed among the vouchers in the office of the Treasurer; I have also inspected the stock of provisions in the commissaries of the institution, and find that the provisions purchased represent the highest grade merchandise on the market. Meats are purchased from Swift & Company, Armour, Sanders and other packers of the highest reputation, on weekly bids, based upon specifications required by the College. The records show that shipments are frequently returned by the officer in charge because the quality of goods does not comply with such specifications. It appears

that all poultry is killed and dressed in the college plant. No cold storage poultry being purchased.

The records indicate that every can of goods ordered is purchased on a written guarantee of quality over a period of one year. The labels of all defective articles are kept and returned to shippers for credit. I find also that all goods are guaranteed against decline in the market.

I have examined various records in this office which indicate that the Mess Officer personally examines all goods upon arrival and checks the invoices for the purpose of verifying the purchases with regard to price, quantity and quality. The purchase files appear to be unusually complete.

The Mess Hall is run on a plan of carefully prepared cost sheets, which are figured on a basis of cost per meal, per man. The average cost per day according to such records, is upward of \$425.00 for maintenance of the dining room. While the records further indicate that the students pay only \$16.00 per month for board, or about 17 cents per meal.

A daily menu record is also kept on account of the three meals served. I have examined a great many of these menu sheets, at random and find that a well balanced meal is described in every such record examined.

I have also examined complaint reports on file in this office and, considering the number of meals served, it would appear that the complaints, of record, are almost negligible by comparison.

According to the records in the office of Treasurer of Clemson College, the Mess Hall division is self-sustaining. All funds are remitted directly to the Treasurer by patrons of the College, and all bills are paid from the Cadet Fund directly by the Treasurer. Purchases for the division are made on requisition, according to the general system adopted by the institution, and the vouchers are all approved by the director of student affairs and by the president, after proper audit, before they are paid. The Mess Officer receives a straight salary only for his services, as the records show, and all labor and other expenses are paid by the College Treasurer direct. The cadet fund is kept intact and the revenues and expenses with reference to the Mess Hall therefore, are easily ascertained.

This report is based upon such matters as I feel that it is within my province to discuss, and deals only with such subjects as might be substantiated by the records and by the goods which I was instructed to examine.

Books and Records:

There have been no changes in the general bookkeeping methods since the last audit was made—as the accounting methods have been built up to a high standard of efficiency. I find, however, that the Treasurer has changed the voucher form to meet the needs of this department more adequately than heretofore. This voucher jacket now in use forms an explanatory brief regarding each expenditure and all expenditures are vouched for under a uniform system. The new jacket forms are easily audited and the accounting system is much improved on account of these forms.

As formerly reported, the Treasurer is keeping individual accounts with all students, giving a complete history of the transactions with students from the date of matriculation. The "Student's Banking Account" is used as a depository for convenience of the students.

New filing cabinets have been provided within the past fiscal year and the Treasurer has installed "pigeon hole" devices for distribution of the current vouchers. The daily work in the office is greatly facilitated by these improvements and the installation of additional filing cabinets etc., has relieved the congested condition which has been a handicap for several years past.

Concluding Comments:

During the past twelve years the writer has been called upon to conduct the annual independent audits of the Treasurer's office almost without interruption. In presenting this report, I feel that I would be guilty of neglecting an important subject if I did not refer to the relations between this department and the office of President.

My annual engagements at Clemson College have given me unusual opportunities to discuss with the late President (Dr. W. M. Riggs) many problems with reference to college finances, and my observations have led me to conclude that the institution must feel the great loss of one with his remarkable grasp of accounting and financing details. It is gratifying to note, however, that the Acting President (Mr. S. B. Earle) has entered into this phase of the work with similar views of sympathy and cooperatino, which are so essential to the Treasurer in meeting the varied problems concerning the conduct of his department. It is without the scope of my work to refer to matters which do not enter into the accounting program and I am unfamiliar with other activities of the College. It is, however, incumbent on me to study the accounting methods and procedure from every angle, and it is my pleasure to report that the Treasurer and his assistants merit such commendation as they may receive from any source.

College Fund:

On page 7, of this report, I present a condensed statement of the receipts and disbursements of the general College Fund for the year ending June 30, 1924. This fund includes a balance of \$148,911.33 brought forward on July 1, 1923; income from various sources in the sum of \$299,013.37 and an appropriation of \$105,703.85 for the Collegiate Institute, making a total of \$553,628.55 to account for. The expenditures cover Public State work of \$46,371.24, College operating expenses \$271,723.74 and additions to property in the sum of \$111,453.52, a total of \$429,549.00, leaving an unexpected balance of \$124,079.55, as of date June 30, 1924.

Auditor's Note:

With reference to the appropriation of \$105,703.85, the figures are arrived at by using part of the 1923 and part of the 1924 appropriations in order to get the fund on a basis of the College Fiscal Year. L. A. S.

The statement on page 8 and 15, gives the College Expenditures, in detail according to the standardized classifications, as the accounts appear on the Treasurer's books. The recapitulation on page 16, shows the general departmental appropriations, as fixed by the Trustees. I have compiled, also, a revised classification, in order to show the costs of various objects, from a different angle.

Other Funds

Other funds which originate at the College, but which are handled independently are designated as follows, viz: The Cadet Fund; The Revolving Fund and the Cadet Banking Account (a private banking business for the convenience of the Students.) Self-explanatory statements of the Cadet Fund and the Revolving Fund are presented on pages 19 and 23, of this report. The Cadet Banking Account is submitted below:

Cadet Banking Account
(Year ended June 30, 1924)

| | |
|---|--------------------|
| Balance on hand July 1, 1923 | \$ 2,641.87 |
| Deposits July 1, 1923 to June 30, 1924..... | 58,994.44 |
| Total | \$61,636.31 |
| Checks paid July 1, 1923 to June 30, 1924 | \$59,684.70 |
| Cash balance June 30, 1924 | 1,951.61 |
| Total | \$61,636.31 |

The cash balances as of June 30, 1924, on account of each of the above described funds. are accounted for in the general cash statement on Page 32.

The Clemson College Hotel account as described on page 24, is an independent division of the College Activities.

COLLEGE FUND

General Statement of Receipts and Expenditures

(Fiscal Year Ended June 30, 1924)

Balance July 1, 1923\$148,911.33

Income:

| | |
|--|--------------|
| Privilege Fertilizer Tax | \$220,329.60 |
| Morrill and Nelson Fund | 25,000.00 |
| Interest on Landscrip | 5,754.00 |
| Interest on Clemson Bequest..... | 3,512.36 |
| Tuition from Students | 16,505.70 |
| Rentals | 10,700.82 |
| Matriculation and Laboratory Fees..... | 3,757.65 |
| Miscel. (Including Interest received) | 13,453.24 |

\$299,013.37

Appropriation:

| | | |
|---------------------------------|--------------|--------------|
| For Collegiate Instruction..... | \$105,703.85 | \$404,717.22 |
|---------------------------------|--------------|--------------|

| | | |
|-------------|--|--------------|
| Total | | \$553,628.55 |
|-------------|--|--------------|

EXPENDITURES

Public State Work:

| | | |
|---|--------------|--------------|
| Scholarships and Advertisements..... | \$ 16,661.45 | |
| Fertilizer Analysis and Inspection..... | 29,710.29 | \$ 46,371.74 |

College Operating Expenses:

| | | |
|----------------------------------|--------------|------------|
| Salaries | \$169,009.91 | |
| Coal, Labor, Supplies, etc. | 102,713.83 | 271,723.74 |

Other Expenditures:

| | | |
|------------------------------------|-----------|------------|
| Equipment for teaching..... | 19,029.81 | |
| Permanent Additions and Improvm'ts | 92,423.71 | 111,453.52 |

| | | |
|---------------------------------|--|--------------|
| | | \$429,549.00 |
| Cash balance June 30, 1924..... | | \$124,079.55 |

\$553,628.55

STATEMENT OF COLLEGE FUND

(Expenditures according to College Classification)

Fiscal Year Ended June 30, 1924.

PUBLIC STATE WORK DEPARTMENT**Scholarships and Advertisements—**

| | | |
|---------------------------------------|--------------|--------------|
| Scholarships and Advertisements | \$ 16,661.45 | \$ 16,661.45 |
|---------------------------------------|--------------|--------------|

Fertilizer Inspection and Analysis—

| | | |
|--------------------------------------|----------|-----------|
| Salaries—Chemists | 8,550.00 | |
| Chemicals | 500.00 | |
| Apparatus | 400.00 | |
| Gasoline | 281.70 | |
| Record Books, Postage, etc. | 165.77 | |
| Incidentals | 43.32 | |
| Labor—Janitor | 300.00 | |
| Extra Help in Laboratory and Office | 826.67 | |
| Emergency Supplies, Labor, etc. | 591.19 | |
| Traveling Expenses | 90.05 | |
| Salaries Secretary and Clerk | 4,000.00 | |
| Labor—Janitor (Fert. Insp.) | 600.00 | |
| Inspection Tags and Printing..... | 5,269.94 | |
| Pay and Travel of Inspectors | 6,604.25 | |
| Freight, Postage, etc. | 678.71 | |
| Legal Services | 250.00 | |
| Fertilizer Bulletins | 443.90 | |
| Repairs and Replacements | 38.09 | |
| Office Furniture and Fixtures | 76.70 | 29,710.29 |

| | | |
|--------------------------------------|--|--------------|
| Public State Work Expenditures | | \$ 46,371.74 |
|--------------------------------------|--|--------------|

COLLEGE WORK**Academic Department****Economics and Sociology Division—**

| | | |
|---------------------------------------|---------|------|
| Periodicals and Reference Books | \$ 5.00 | 5.00 |
|---------------------------------------|---------|------|

English Division—

| | | |
|-----------------------|-------|-------|
| Repairs | 1.40 | |
| Stationery, etc. | 11.90 | 13.30 |

History Division—

| | | |
|--------------------------------|------|------|
| Periodicals for Class Use..... | 7.00 | 7.00 |
|--------------------------------|------|------|

Office and Unclassified Division—

| | | |
|-----------------------------------|--------|--------|
| Janitor (Upper Floor) | 410.00 | |
| Office and Janitor Supplies | 144.76 | |
| Class Room Seats | 322.96 | 877.72 |

Physics Division—

| | | |
|---------------------------------------|--------|--------|
| Laboratory Supplies and Repairs | 137.51 | |
| Physics Apparatus | 340.93 | 478.44 |

Salaries—

| | | |
|---|-----------|-----------|
| Salaries—Professors and Assistants..... | 34,918.32 | 34,918.32 |
|---|-----------|-----------|

| | | |
|-------------------------------|--|--------------|
| Department Expenditures | | \$ 36,299.78 |
|-------------------------------|--|--------------|

AGRICULTURAL DEPARTMENT**Agricultural Education Division—**

| | | |
|----------------------------------|-----------|-----------|
| Transportation of Students | \$ 298.54 | |
| Printing School Leaflets | 177.32 | |
| Lantern Slides and Photos | 18.52 | |
| Office Furniture | 86.53 | |
| Laboratory Equipment | 175.18 | \$ 756.09 |

Agromomy Division—

| | | |
|---|--------|----------|
| Labor | 202.00 | |
| Seed, Score Cards, etc | 49.95 | |
| Repairs and Parts for Machines | 29.85 | |
| Materials for class use | 201.00 | |
| Cement, Gasoline, Oil, etc. | 149.50 | |
| Misc. Small Lab'y Equipment | 494.86 | |
| Office Equipment, Files, etc. | 48.36 | |
| Equipment for Farm Mach. Lab'y | 994.19 | |
| Screening Windows, F. M. Building | 30.00 | 2,199.71 |

Animal Husbandry Division—

| | | |
|--------------------------------------|----------|----------|
| Part salary—Herdsman | 500.00 | |
| Labor | 1,000.00 | |
| Repairs to Fences | 238.64 | |
| Expenses to Judging Contest | 29.22 | |
| Feed and Fertilizer | 2,971.62 | |
| Veterinary Service | 200.00 | |
| Registration Books | 50.00 | |
| Farm Tools | 199.62 | |
| Misc. Small Tools and Equipment | 199.43 | |
| Piping water to Hog Lots | 280.01 | |
| New Fencing for Hog Lots | 601.52 | |
| Office and Classroom Furniture | 150.00 | |
| Pasture Improvements | 369.90 | |
| Vats for Hog Houses and Lots | 299.84 | |
| Beef Cattle Barn | 2,510.99 | 9,600.79 |

Botany and Bacteriology Division—

| | | |
|------------------------------------|--------|----------|
| Botanical Publications | 47.00 | |
| Glassware and Lab'y Supplies | 396.79 | |
| Collecting Materials | 282.35 | |
| Repairs and Replacements | 99.01 | |
| Microscopes | 423.30 | |
| Morphology Equipment | 99.41 | |
| Plant Physiology Equipment | 74.01 | |
| Soapstone Sink and Shelves | 32.18 | 1,454.05 |

Dairy Division—

| | | |
|---|----------|----------|
| Wages—Creamery Foreman | 825.00 | |
| Wages—Dairy Herdsman | 582.57 | |
| Dairy Herd Labor for Teaching | 483.99 | |
| Feed for Dairy Herd for Teaching | 701.27 | |
| Freight and Express | 59.33 | |
| Operating and Upkeep Expenses | 129.94 | |
| Upkeep of Fences | 197.90 | |
| Repairs to Creamery | 170.98 | |
| Expenses to Judging Contest | 100.00 | |
| Livestock Exhibit State Fair | 299.52 | |
| Supplies for Teaching | 205.50 | |
| Litter Carriers | 99.27 | |
| Barn Equipment and Supplies | 99.99 | |
| Creamery Equipment for Teaching | 355.93 | |
| Wizard Vat Pasteurizer | 297.00 | |
| Power Churn | 153.69 | |
| Hay Fork and Truck | 102.79 | |
| Improvement to Dairy Barn Grounds | 49.96 | |
| Half Cost Ford Truck | 300.00 | |
| Pasture Improvements | 200.00 | |
| Guernsey Cattle | 1,000.00 | |
| Roof to W. Silos | 508.87 | |
| Five Test Cow Stalls | 866.77 | |
| F's for 2 Small Silos | 247.36 | |
| Enlargement Milk Room | 799.99 | 8,837.62 |

Entomology and Zoology Division—

| | | |
|-----------------------------------|-----------|--------|
| Class and Lab'y Materials | \$ 140.37 | |
| Labor | 149.50 | |
| Repairs to Instruments | 75.00 | |
| Spray and Dusting Machinery | 138.48 | |
| Laboratory Equipment | 198.35 | |
| Stools for Laboratory | 111.52 | 813.22 |

Farm Division—

| | | |
|---------------------------------|--------|--------|
| Ditching in Bottoms | 600.00 | |
| Repairs to Farm Buildings | 200.00 | 800.00 |

Geology and Mineralogy Division—

| | | |
|---------------------------------------|-------|--------|
| Laboratory Supplies and Repairs | 50.00 | |
| Labor | 49.60 | |
| Motor for Ceramic Laboratory | 53.68 | |
| Lantern Slides | 9.75 | |
| Stools | 39.81 | 202.84 |

Horticultural Division—

| | | |
|-------------------------------------|--------|----------|
| Part Salary Greenhouse Foreman .. | 660.00 | |
| Part Salary Hort. Foreman | 722.25 | |
| Labor | 836.86 | |
| Fertilizers, Seeds and Plants | 449.55 | |
| Oil, Gas, etc. | 99.97 | |
| Greenhouse Supplies and Repairs ... | 122.92 | |
| Coal for Greenhouse | 97.35 | |
| Spray Apparatus and Materials | 59.87 | |
| Feed for two mules | 260.00 | |
| Tools for Class Use | 49.79 | |
| Spray Apparatus | 39.85 | |
| Office Equipment | 50.00 | |
| Harness | 35.15 | |
| Two Horse Wagon | 123.48 | |
| One half Cost of Tractor, etc. | 266.25 | 3,873.29 |

Office and Unclassified Division—

| | | |
|---------------------------------------|----------|----------|
| Janitors and Janitor Supplies | 1,108.30 | |
| Gasoline | 188.96 | |
| Attendance on Conventions | 99.95 | |
| Stationery and Postage for Dept. | 499.79 | |
| Upkeep of Building | 195.40 | 2,092.40 |

Veterinary Science Division—

| | | |
|------------------------------------|--------|--------|
| Janitor and Extra Labor | 487.50 | |
| Coal | 29.22 | |
| Veterinary Journals | 4.00 | |
| Repairs to Fences and Stalls | 23.09 | |
| Laboratory Supplies | 44.89 | 588.70 |

Salaries—

| | | |
|------------------------------------|--------------|--------------|
| Salaries—Professors and Assistants | \$ 36,136.57 | \$ 36,136.57 |
|------------------------------------|--------------|--------------|

| | | |
|-------------------------------|--|--------------|
| Department Expenditures | | \$ 67,355.28 |
|-------------------------------|--|--------------|

CHEMICAL DEPARTMENT**Chemistry Division—**

| | | | |
|------------------------------------|----|--------|-------------|
| Chemical Apparatus | \$ | 600.00 | |
| Chemicals and Supplies | | 600.00 | |
| Gasoline | | 295.59 | |
| Books, Journals and Bindings | | 199.94 | |
| Repairs to Apparatus | | 45.55 | |
| Incidentals | | 142.18 | |
| Janitor and Office Helper | | 660.00 | |
| Repairs to Plumbing | | 689.05 | |
| Chemical Apparatus | | 397.05 | |
| Student Lockers | | 165.00 | |
| Additional Gas Machines | | 800.00 | \$ 4,594.36 |

Salaries—

| | | | |
|--------------------------------------|----|----------|--------------|
| Salaries—Professors and Assistants.. | \$ | 9,500.00 | \$ 9,500.00 |
| Department Expenditures | | | \$ 14,094.36 |

ENGINEERING DEPARTMENT**Civil Engineering Division—**

| | | | |
|--|----|--------|-----------|
| Class Materials | \$ | 100.00 | |
| Repairs and Replacements | | 150.00 | |
| One Transit | | 389.06 | |
| Equipment for Sand and Asphalt Testing | | 150.00 | |
| Class Room Seats | | 125.00 | \$ 914.06 |

Drawing Division—

| | | |
|--|--------|--------|
| Materials, Ink, Paper, etc. | 28.13 | |
| Repairs and Renewal of Apparatus | 71.87 | |
| Expenses of Architects.. Contest | 25.00 | |
| Subscriptions to Magazines | 51.50 | |
| Student Help in Blue Printing | 49.80 | |
| Drafting Tables | 247.85 | |
| Stools for Students | 85.00 | |
| Filing Cabinet for Drawings | 23.50 | |
| Architectural Reference Books | 74.91 | |
| Architectural Lantern Slides | 915 | |
| Plaster Casts | 25.00 | 691.71 |

Electrical Engineering Division—

| | | |
|----------------------------|--------|--|
| Laboratory Supplies | 109.99 | |
| Repairs and Renewals | 105.00 | |

| | | |
|--|--------|----------|
| Class and Lab'y notes for Students | 29.72 | |
| Student Assistance | 147.30 | |
| Reference Books, etc. | 39.75 | |
| Freight on Machinery | 2.62 | |
| Galvanized Potent and Condenser ... | 292.00 | |
| Polyphrase Voltmeter | 154.20 | |
| Magnetic Tachymeter | 185.00 | |
| Three 5 K. W. Transformers | 225.00 | |
| Single Phase | 99.40 | |
| Power Factor Meter | 82.00 | |
| G. E. Condensor | 225.00 | |
| Instrument Transformers | 224.80 | 1,921.78 |

Forge and Foundry Division—

| | | |
|--------------------------------------|----------|----------|
| Latticing Supply Room | 77.68 | |
| Labor for Forge and Foundry | 1,650.00 | |
| Repairs and Replacements | 74.94 | |
| Forge Shop Supplies..... | 299.90 | |
| Coal for Forge Shop | 374.41 | |
| Foundry Supplies | 50.00 | |
| Pig Iron and Brass for Foundry | 150.00 | |
| Moulding Sand | 57.00 | |
| Coke for Foundry | 65.00 | |
| Gyrator Foundry Riddle | 150.00 | |
| Lumber for Flasks | 25.00 | 2,973.93 |

Machine Shop Division—

| | | |
|-------------------------------------|--------|----------|
| Labor—Machinist | 675.00 | |
| Repairs and Replacements | 214.23 | |
| Shop Materials | 351.98 | |
| Freight on Lathes | 16.27 | |
| Lathe, Chucks, Vises and Benches... | 432.06 | |
| Oxacetylene Equipment | 411.36 | 2,100.90 |

Mechanical Engineering Division—

| | | |
|-------------------------------------|-----------|----------|
| Laboratory Supplies | \$ 140.96 | |
| Repairs and Replacements | 22.59 | |
| Coal Calormeters | 350.00 | |
| Platform Scales | 67.85 | |
| Water Weighing Tanks | 60.00 | |
| Oil Flask Point Tester | 14.50 | |
| Wieso & Sump | 30.37 | |
| Cement floor, hydraulic Lab'y | 442.23 | 1,128.50 |

SUPPLEMENTARY REPORTS

Office and Unclassified Division—

| | | | |
|-----------------------------------|----|--------|-----------|
| Labor—Janitor | \$ | 600.00 | |
| Office and Janitor Supplies | | 209.29 | |
| Upkeep of Building | | 37.65 | |
| Attendance on Conventions | | 94.77 | |
| Incidentals | | 9.18 | |
| Blackboards for Classes | | 40.03 | \$ 990.92 |

Wood Shop Division—

| | | | |
|-------------------------------------|----|--------|-------------|
| Labor—Machinist | \$ | 450.00 | |
| Supplies, as Lumber, etc. | | 474.12 | |
| Repairs and Replacements | | 309.26 | |
| Doors and Latches Lumber Shop | | 183.95 | |
| Double Ceil Finishing Room | | 84.96 | \$ 1,502.29 |

| | | | |
|--|----|-----------|--------------|
| Salaries—Professors and Assistants | \$ | 34,954.95 | \$ 34,954.95 |
|--|----|-----------|--------------|

| | | | |
|-------------------------------|--|--|--------------|
| Department Expenditures | | | \$ 47,179.04 |
|-------------------------------|--|--|--------------|

MILITARY DEPARTMENT**Office and Unclassified—**

| | | | |
|---------------------------------|----|--------|-------------|
| Postage, Stationery, etc. | \$ | 429.25 | |
| Military Supplies | | 60.82 | |
| Upkeep of Band | | 123.04 | |
| Officers' Sabers | | 202.97 | |
| Cadet Officers' Insignias | | 325.00 | |
| New Band Instruments | | 113.04 | |
| Target Range | | 84.35 | |
| Class Room Equipment | | 5.00 | |
| Office Equipment | | 100.00 | \$ 1,443.47 |

Salaries—

| | | | |
|---------------------------------------|----|----------|-------------|
| Salaries—Commandant and Assistants... | \$ | 5,719.65 | \$ 5,719.65 |
|---------------------------------------|----|----------|-------------|

| | | | |
|-------------------------------|--|--|-------------|
| Department Expenditures | | | \$ 7,163.12 |
|-------------------------------|--|--|-------------|

TEXTILE DEPARTMENT.**Carding and Spinning Division—**

| | | | |
|------------------------------|----|--------|-------------|
| Cotton for Class Use | \$ | 500.00 | |
| Repairs and Supplies | | 182.83 | |
| Material for Class Use | | 96.46 | |
| Revolving Flat Card | | 450.00 | \$ 1,229.29 |

Dyeing Division—

| | | |
|-------------------------------------|--------|--------|
| Chemicals and Dye Stuffs | 168.67 | |
| Glassware and Lab'y Materials | 303.77 | |
| Mics. Small Lab'y Apparatus | 199.08 | 671.52 |

Office and Unclassified Division—

| | | |
|-------------------------------------|--------|----------|
| Janitor and Engineer | 999.20 | |
| Gasoline | 48.32 | |
| Stationery, Postage, etc. | 49.00 | |
| Student Labor | 93.98 | |
| Mill Boy Helper | 343.80 | |
| Textile Periodicals | 14.14 | |
| Freight on Donated Machinery | 198.61 | |
| Office Equipment | 69.50 | |
| Pulleys, Belts & Installation | 54.85 | 1,871.40 |

Weaving Division—

| | | |
|--|--------|----------|
| Warp and Filling Farm | 833.53 | |
| Loom Supplies and Repairs | 99.10 | |
| Knitting Yarn and Samples for Analysis | 4.23 | |
| Four Draper Looms | 743.88 | |
| Double Cylinder Dobby Looms | 300.00 | 1,980.74 |

Salaries—

| | | |
|--|-----------|-----------|
| Salaries—Professors and Assistants | 12,045.81 | 12,045.81 |
| Department Expenditures | | 17,798.76 |

PUBLIC UTILITIES DEPARTMENT**Campus Division—**

| | | |
|--|----------|----------|
| Part Salary Campus Foreman | 660.00 | |
| Labor for Campus | 1,793.24 | |
| Fertilizers | 400.00 | |
| Seeds Plants and Trees | 650.00 | |
| Feed and Upkeep of Mules | 514.68 | |
| Tools, Machinery and Repairs | 180.00 | |
| Coping at Agril. Hall | 265.30 | |
| Cement Walk | 971.79 | |
| Storm Water Drainage | 500.00 | |
| Development for Expt. Station Road | 298.37 | |
| Development Hotel, Bks. 1, 2, 3 | 1,599.68 | |
| Mower and Hand Mowers | 149.24 | |
| Two Horse Wagon & Harness | 200.00 | |
| Development Faculty Cemetery | 879.56 | |
| Trash Boxes | 146.28 | 9,208.14 |

Construction & Repairs Division—

| | |
|--|-----------|
| Office Supplies, Postage, etc | 71.42 |
| Repairs and Renewals of Apparatus | 22.58 |
| Tools and Implements | 49.61 |
| Gasoline and Tires for Truck | 100.00 |
| Misc. Unforeseen Repairs to Public Buildings | 1,133.63 |
| Stock of Lumber | 494.33 |
| Additional Cement Walks (Bk. No. 2) ... | 300.20 |
| New Gutters and Paint (Bk. 1) | 287.07 |
| Repairs and Painting guard room (No. 1) | 39.99 |
| Repairs to Public Buildings (Ex "A") | 5,372.65 |
| Repairs to Residences 1923-24 (Ex. "B") | 4,730.74 |
| Lumber Storage Shed | 396.92 |
| Partitioning Room No. 24 Ag. Bldg | 386.38 |
| Moving Partition in Room 23 Ag. Hall | 24.75 |
| Completion 2nd. Story in Museum | 192.92 |
| Trunk Room (Bk. No. 2) | 778.00 |
| Toilet Room (Eng. Bldg.) | 105.13 |
| Re-arrangement of 3rd Floor Eng. Bldg. | 275.19 |
| Completion of New Work (1st Floor Eng. Bldg.) | 366.11 |
| Door in Drawing Room (Eng. Bldg.) | 23.83 |
| Brick Addition (Elect. Lab.) | 748.99 |
| Four Ventilators (Farm Mach. Bldg.) | 126.10 |
| Areas & Steps at Lower Doors (Y. M. C. A.) | 24.15 |
| Store Room & Stairs (Cadet Hosp.) | 301.56 |
| Ventilators Front & Rear Doors (Cadet Hospital) | 110.23 |
| Toilet S-Wing Barracks No. 1 (1924) | 9,321.00 |
| Toilet N-Wing Barracks No. 1 (1923) ... | 8,232.87 |
| Chapel Extension, Ect. (1924) | 34,423.78 |
| C & R Shop (1924) | 1,482.87 |
| Additions to Barracks No. 1, etc | 22,534.46 |
| Additional Door (Elmore) | 17.58 |
| Back Steps & Platform (Pickett) | 39.92 |
| Double Doors (Klugh) | 34.64 |
| Additional Room (Bradley) | 594.54 |
| Pr. Glass Doors (Daniel) | 29.88 |

| | | |
|--|----------|-------------|
| Ceiling Servants House (Daniel) | 63.29 | |
| Deadening Floors (N. Hotel Annex) | 114.80 | |
| Changes & Additions (Calhoun) | 66.45 | |
| Salary Supt. (Hewer) | 1,800.00 | |
| Toilet Old Pres. House | 135.91 | |
| Gallery N. End of Chapel Ext. | 900.00 | \$96,254.47 |

Heat, Light and Water Division—

| | | |
|---------------------------------------|-----------|--------------|
| Labor—Engineers, Firemen, etc. | 6,911.80 | |
| Supplies | 1,893.21 | |
| Coal | 14,698.81 | |
| Repairs | 745.64 | |
| Fire Hose and Hose Fixtures | 365.00 | |
| Imp. Hospital and Heating System..... | 97.50 | \$ 24,711.96 |

Roads and Hauling Division—

| | | |
|--|----------|-------------|
| Labor, Truck Drivers, etc. | 2,099.80 | |
| Hire of Teams from Farm | 200.00 | |
| Gasoline, Oil, Tires, Repairs, etc. | 1,298.71 | |
| Top Soiling Roads | 499.56 | |
| Salary Superintendent | 1,500.00 | \$ 5,598.07 |

Telephone & Radio System—

| | | |
|----------------------------------|--------|----------|
| Upkeep of System | 168.53 | |
| Labor, Operation & Repairs | 694.63 | |
| Radio Operator, etc | 294.95 | 1 158.11 |

Night Watchman & Police—

| | | |
|---|--------|--------|
| Salary watchman and Special Police..... | 780.00 | |
| Watchman Supplies | 19.33 | 799.33 |

| | | |
|-------------------------------|--|------------|
| Department Expenditures | | 137,730.08 |
|-------------------------------|--|------------|

MISCELLANEOUS DEPARTMENT**Library Division—**

| | | |
|---|----------|-------------|
| Magazines | 345.06 | |
| Supplies | 114.01 | |
| Membership dues to Societies | 41.00 | |
| Books (Gen. & Rep. L.) | 987.15 | |
| Charging Desks | 100.00 | |
| Equipment (Ref. Library) | 524.75 | |
| Supplies (Ref. Library) | 37.65 | |
| Salaries—Librarians and Assistant | 4,356.26 | \$ 6,505.88 |

Miscellaneous Items Division—

| | | |
|---|-------------|--------------|
| Exp. of Trustees and Board of Visitors..... | \$ 1,016.53 | |
| Insurance | 5,335.51 | |
| Contingent and Incidentals Expense..... | 3,586.58 | |
| Ministers | 2,417.27 | |
| Y. M. C. A. Secretary | 500.00 | |
| College Catalogue | 796.19 | |
| Report to Legislature | 73.60 | |
| Commencement Expenses | 342.78 | |
| Trustees Medals | 33.50 | |
| Chapel Lecture | 175.00 | |
| Membership to National Association..... | 71.00 | |
| Examination Booklets | 283.27 | |
| Pension of J. B. Stephens, | 275.00 | |
| Scavenger Service | 492.00 | |
| State Fair Exhibit | 317.53 | |
| Travel and Entertainm. Leg. Com., etc. | 411.47 | |
| Summer School | 1,621.68 | |
| Popular Bulletins | 100.00 | |
| Salary Campus Marshall | 686.64 | |
| Salary Mrs. W. M. Riggs | 2,500.00 | |
| Salary Magistrate | 100.00 | \$ 21,135.55 |

President's Office—

| | | |
|---|-----------|--------------|
| Students' Cards, Forms, etc. | 722.09 | |
| Stamps, Stationery and Supplies | 961.44 | |
| Traveling Fund | 683.05 | |
| Janitor, Janitor Supplies | 603.55 | |
| Salaries—President, Registrar, Dir. of Student Affairs, Stenographer etc. | 16,030.00 | \$ 19,000.13 |

Treasurer's Office—

| | | |
|---|----------|-------------|
| Students' Cards, Forms, etc. | 600.00 | |
| Record Books, Stationery, Postage, etc. | 775.00 | |
| Emergency Asst. ....e..... | 905.36 | |
| Premiums on Bonds | 112.50 | |
| Salaries—Treasurer and Bookkeepers | 5,844.44 | |
| Audit of Books and Accounts (Searson) | 677.98 | \$ 8,915.23 |

| | | |
|-------------------------------|--|--------------|
| Department Expenditures | | \$ 55,556.84 |
|-------------------------------|--|--------------|

SUMMARY OF RECEIPTS AND DISBURSEMENTS
(College Fund for Fiscal Year Ended June 30, 1924)

| ACCOUNT | DEPARTMENTAL | | |
|---------------------------------------|--------------|--------------|---------------|
| | Appro. | Expendi- | Balance |
| | priations | tures | June 30, 1924 |
| Public State Work — | | | |
| Scholarships and Advertisements | \$ 22,500.00 | \$ 16,661.45 | |
| Fertilizer Analysis | 11,770.00 | 11,786.79 | \$ 5,821.76 |
| Fertilizer Inspection | 25,000.00 | 17,923.50 | 7,076.50 |
| | <hr/> | <hr/> | <hr/> |
| | \$ 59,270.00 | \$ 46,371.74 | \$ 12,898.26 |
| College Work— | | | |
| Academic Department | \$ 37,713.00 | \$ 36,299.78 | \$ 1,413.22 |
| Agricultural Department | 72,330.79 | 67,355.28 | 4,975.51 |
| Chemical Department | 14,165.00 | 14,094.36 | 70.64 |
| Engineering Department ... | 50,687.52 | 47,179.04 | 3,508.48 |
| Military Department | 8,520.00 | 7,163.12 | 1,356.88 |
| Textile Department | 18,508.00 | 17,798.76 | 709.24 |
| Public Utilities | 151,536.81 | 137,730.08 | 13,806.73 |
| Miscellaneous Department..... | 57,035.99 | 55,556.84 | 1,479.15 |
| | <hr/> | <hr/> | <hr/> |
| | \$410,497.11 | \$383,177.26 | \$ 27,319.85 |
| | <hr/> | <hr/> | <hr/> |
| Total | \$469,767.11 | \$429,549.00 | \$ 40,218.11 |
| Unapportioned balance | \$ 83,861.44 | | \$ 83,861.44 |
| | <hr/> | <hr/> | <hr/> |
| | \$553,628.55 | | \$124,079.55 |

CONSOLIDATED STATEMENT—COLLEGE FUND

(Revised Classification of Expenditures)

Operating and General Expenses

Personal Service—

| | |
|------------------------------|--------------|
| Public State Wk. Dept. | \$ 12,550.00 |
| Administrative | 16,050.00 |
| Clerical | 5,844.44 |
| Extra Clerical Help | 1,732.03 |
| Inspectors | 6,604.25 |
| Instructors and Assts. | 142,998.95 |
| Utilities | 4,720.00 |
| Agri. Department (sundry) .. | 1,882.25 |
| Magistrate | 100.00 |
| Ministers | 2,417.27 |
| Secretary Y. M. C. A. | 500.00 |

SUPPLEMENTARY REPORTS

| | | |
|-------------------------------|-----------|---------------|
| Attorney | 250.00 | |
| Lecturer | 175.00 | \$195,824.19 |
| <hr/> | | |
| Labor (All Departments) | 23,391.69 | \$ 219,215.88 |

Supplies and Materials—

| | | |
|---|-----------|--------------|
| General Supplies | 3,837.65 | |
| Coal | 15,614.82 | |
| Chemical and Laboratory Supplies | 2,357.69 | |
| Emergency Supplies | 591.19 | |
| Office Supplies, Record Books, etc..... | 7,270.90 | |
| Materials for Class use..... | 1,375.00 | |
| Feed Fertilizer, etc. | 5,397.11 | |
| Seeds, Score Cards, etc. | 699.95 | |
| Disinfectants | 297.00 | |
| Gasoline and Oils | 2,462.75 | \$ 39,904.06 |

Other Expenses—

| | | |
|---|----------|--------------|
| Traveling Expense | 3,101.71 | |
| Summer School Expense | 1,621.68 | |
| Premiums on Official Bonds | 112.50 | |
| Insurance | 5,335.51 | |
| Inspection Tags, Bulletins, Printing, etc | 6,713.84 | |
| Membership Dues to Societies | 112.00 | |
| Contingent and Incidentals | 3,663.40 | |
| Band Expenses | 236.08 | |
| Officers Insignia, etc. | 527.97 | |
| Periodicals, Reference Books, etc. | 467.70 | |
| Sundry Freight Expenses and Postage | 955.54 | |
| Material and Upeep—Radio Station..... | 1,158.11 | |
| State Fair Exhibit | 617.07 | |
| Commencement Expense | 342.78 | |
| Not Otherwise Classified | 863.56 | \$ 25,829.45 |

Repairs and Replacements—

| | | |
|-------------------------------------|-----------|--------------|
| General Repairs, (Mchy. etc.)..... | 3,248.16 | |
| Repairs to Buildings | 12,992.75 | |
| Terracing, Road Wk. & Landscape Wk. | 3,277.17 | |
| Plumbing Repairs | 689.05 | \$ 20,207.13 |

| | | |
|---------------------------------------|--------------|--------------|
| Scholarships and Advertisements | \$ 16,661.45 | \$ 16,661.45 |
|---------------------------------------|--------------|--------------|

\$321,817.97

Additions to Property

Equipment—

| | | |
|---|----------|--------------|
| Instruments and Apparatus | 5,697.61 | |
| Office Furniture and Fixtures | 1,168.49 | |
| Textile Equipment | 2,382.26 | |
| Engine Rooms, Shops, Fire, etc. | 1,564.77 | |
| Hort. Farm and Landscape and Dairy..... | 4,259.73 | |
| Cattle Purchased | 1,000.00 | |
| Laboratory, Class Rooms, etc. | 1,528.90 | |
| Ford Truck | 300.00 | \$ 17,901.76 |
| | | <hr/> |

Permanent Improvements—

| | | |
|---|-----------|--------------|
| Farm Division (barns, fences, etc.) | 5,783.62 | |
| Engine Room Improvements | 3,487.47 | |
| Additions and Improvem'ts to Barracks | 24,187.90 | |
| Hospital | 411.79 | |
| Residences | 802.51 | |
| Additions to Chapel | 35,323.78 | |
| New Toilets | 17,794.91 | |
| Construction of Sidewalks, Coping, etc. | 2,037.29 | \$ 89,829.27 |
| | | <hr/> |
| Total | | \$429,549.00 |
| | | <hr/> <hr/> |

STATEMENT OF CADET FUND

(Fiscal Year Ended June 30, 1924)

Receipts

| | | |
|-----------------------------------|--------------|--------------|
| Balance on Hand July 1, 1923..... | \$ 12,395.74 | |
| Breakage | 2,926.22 | |
| Diplomas | 6.80 | |
| Room, Heat, Light, Water | 16,491.39 | |
| Hospital | 11,318.01 | |
| Incidentals | 9,654.95 | |
| Laundry | 14,038.54 | |
| Subsistence | 167,510.83 | |
| Uniforms | 41,466.97 | |
| | | <hr/> |
| Total | | \$275,809.45 |
| | | <hr/> <hr/> |

Expenditures—

Expenditures from balance on hand July 1st, 1923.

| | | | |
|-------------------------------|----|----------|-------------|
| Labor—Carpentering, etc. | \$ | 132.27 | |
| Clothing and Dry Goods | | 59.75 | |
| Supplies | | 72.34 | |
| Materials, etc. | | 842.76 | |
| Equipment | | 1,509.04 | \$ 2,616.16 |

Breakage—

| | | |
|---------------------------|--------|-------------|
| Labor—Carpentering | 945.54 | |
| Freight and Express | 7.19 | |
| Misc. Supplies | 732.27 | |
| Refunds to Students | 27.00 | |
| Materials | 281.07 | |
| Household Equipment | 933.15 | \$ 2,926.22 |

Room, Heat, Light and Water—

| | | |
|----------------------------|-----------|--------------|
| Labor—Engineers, etc. | 3,203.42 | |
| Freight and Express | 7.99 | |
| Telegrams | .30 | |
| Repairs | 302.35 | |
| Coal | 11,271.63 | |
| Office Equipment | 21.00 | |
| Misc. Supplies | 1,083.82 | |
| Refunds to Students | 266.85 | |
| Materials | 325.33 | \$ 16,482.63 |

Hospital Division—

| | | |
|--------------------------------------|----------|-----------|
| Salaries | 4,000.00 | |
| Labor | 2,832.55 | |
| Telephone and Telegrams | 49.85 | |
| Freight and Express | 94.41 | |
| Publications, etc. | 20.10 | |
| Laundry, etc. | 448.79 | |
| Coal, etc. | 95.00 | |
| Food Supplies | 1,499.14 | |
| Office Supplies | 111.28 | |
| Medical and Surgical Supplies | 958.58 | |
| Refrigerating Supplies | 129.75 | |
| Miscellaneous Supplies | 192.99 | |
| Refunds to Students | 67.43 | |
| Medical and Surgical Equipment | 33.59 | |
| Household Equipment | 1,036.34 | |
| Miscellaneous Equipment | 45.71 | 11,615.51 |

Incidentals—

| | | |
|--|----------|-----------|
| Salary—Quarter Master | 687.50 | |
| Labor—Care of Barracks | 3,010.45 | |
| Freight and Express | 20.38 | |
| Office Supplies | 11.00 | |
| Cleaning and Disinfecting Supplies | 340.58 | |
| Miscellaneous Supplies | 2,631.82 | |
| Refunds to Students | 53.95 | |
| Household Equip., chairs, etc. for rooms | 3,252.75 | 10,008.43 |

Laundry—

| | | |
|---|-----------|--------------|
| Labor | 10,448.54 | |
| Freight and Express, Tel. and Tel. | 55.79 | |
| Repairs | 91.24 | |
| Miscellaneous Printed Forms..... | 123.25 | |
| Coal | 498.55 | |
| Feed and Veterinary Supplies | 85.84 | |
| Laundry Supplies | 2,026.42 | |
| Clothing and Dry Goods | 59.60 | |
| Miscellaneous Supplies | 9.55 | |
| Equipment | 115.09 | |
| Refund to Students | 169.95 | \$ 13,683.82 |

Subsistence—

| | | |
|------------------------------|------------|--------------|
| Salaries | 5,000.00 | |
| Labor | 21,538.85 | |
| Groceries | 121,724.02 | |
| Coal | 773.74 | |
| Miscellaneous Supplies | 5,890.33 | |
| Refunds to Students | 1,751.32 | |
| Equipment | 1,026.73 | \$157,704.99 |

Uniforms—

| | | |
|---------------------------|-----------|--------------|
| Uniform Garments | 40,851.55 | |
| Refunds to Students | 1,487.28 | \$ 42,338.83 |

\$257,376.65

Balance on hand June 30, 1924 18,432.80

\$275,809.45

CONSOLIDATED STATEMENT—CADET FUND

(Revised Classification of Expenditures)

Personal Service—

| | | |
|---------------------------|-------------|--------------|
| Salaries (Hospital) | \$ 4,000.00 | |
| Other Salaries | 5,687.50 | |
| Labor | 42,210.62 | \$ 51,898.12 |

Supplies—

| | | |
|--------------------------------------|------------|------------|
| Food Supplies | 122,739.16 | |
| Other Supplies and Materials | 12,467.47 | |
| Medical and Surgical Supplies | 968.58 | |
| Fuel | 12,638.92 | |
| Stationery and Office Supplies | 245.53 | |
| Laundry Supplies | 2,026.42 | |
| Refrigerator Supplies | 129.75 | |
| Disinfectants | 340.58 | 151,556.41 |

Other Expense—

| | | |
|-------------------------------|--------|-----------|
| Freight and Express | 175.16 | |
| Sundry Repairs | 393.59 | |
| Publications | 20.10 | |
| Miscellaneous | 221.41 | |
| Telephone and Telegraph | 60.15 | |
| Laundry (Hospital) | 448.79 | 1,319.20 |
| Refunds to Students | | 3,823.78 |
| Uniforms | | 40,851.55 |

\$249,449.06
Equipment—

| | | |
|--------------------------------------|----------|----------|
| Barracks Equipment | 6,731.18 | |
| Office Equipment | 21.00 | |
| Medical and Surgical Equipment | 33.59 | |
| Laundry Equipment | 115.09 | |
| Subsistence Division Equipment | 1,026.73 | 7,927.59 |

Total\$257,376.65

GENERAL STATEMENT OF REVOLVING FUND

Receipts—

| | | |
|-----------------------------------|--------------|--------------|
| Balance on hand July 1, 1923..... | \$ 39,984.12 | |
| Receipts for Fiscal Year | 168,991.30 | \$208,975.42 |

Expenditures—**Veterinary Hospital—**

| | | |
|--|-----------|--------|
| Wages—Janitoring | \$ 110.00 | |
| Freight, Express and Deliveries | 7.17 | |
| Feed and Veterinary Supplies | 102.52 | |
| Laundry and Disinfecting Supplies | 20.33 | |
| Misc. Supplies | 19.65 | 259.67 |

Hog Cholera Serum Work—

| | | |
|------------------------------------|-----------|-----------|
| Salaries—Clerks | 3,000.00 | |
| Telegraph and Telephone | .65 | |
| Feed and Veterinary Supplies | 15,011.58 | |
| Travel | 11.33 | 18,023.56 |

Nursery Inspection Tags—

| | | |
|---------------------------|--------|--------|
| Freight and Express | 24.49 | |
| Supplies (Tags) | 555.25 | 579.74 |

Manufacturing States Flags—

| | | |
|----------------|-------|-------|
| Supplies | 77.75 | 77.75 |
|----------------|-------|-------|

Summer School—

| | | |
|--------------------------------|----------|-----------|
| Salaries—Instructors | 4,179.19 | |
| Labor | 2,512.99 | |
| Food Supplies | 9,621.06 | |
| Traveling Expenses | 47.80 | |
| Printing and Advertising | 43.30 | |
| Refunds | 184.00 | |
| Fuel | 587.00 | |
| Office Supplies..... | 73.62 | |
| Other Supplies | 72.94 | 17,321.90 |

Education of Disabled Soldiers—

| | | |
|----------------------------|----------|--|
| Salaries—Instructors | 9,120.82 | |
| Labor | 318.00 | |
| Freight, Express etc | 15.96 | |
| Traveling Expenses | 82.02 | |
| Office Supplies | 17.50 | |

| | | |
|-----------------------------|-----------|-----------|
| Educational Supplies | 60.38 | |
| Refunds | 1.66 | |
| Materials | 55.00 | |
| Office Equipment | 747.95 | |
| Educational Equipment | 9.95 | |
| Buildings | 21,215.91 | 31,645.15 |
| | | <hr/> |

Athletic Association—

| | | |
|---|-----------|-----------|
| Salaries—Coach and Assts | 7,236.63 | |
| Labor | 809.90 | |
| Officials and Umpires | 1,300.77 | |
| Guarantees and Exps. etc. of Teams | 11,739.00 | |
| Rain Insurance | 484.24 | |
| Supplies | 6,275.56 | |
| Bleachers, Benches and Fencing | 1,597.32 | |
| Contributions to Y. M. C. A. | 2,200.00 | |
| Students Publication. Posters, etc | 2,106.75 | |
| Freight and Express | 135.19 | |
| Telegraph and Telephone and Postage | 121.38 | |
| Hospital, Medical and Dental Fees | 106.50 | |
| Asso. Dues & Expenses of Delegates | 57.50 | |
| Lyceum Entertainment | 900.00 | |
| Refunds | 75.00 | |
| Repairs & Equipment | 475.84 | 35,621.58 |
| | | <hr/> |

Textile Cotton Sales—

| | | |
|--|-----------|----------|
| Freight and Express | \$ 186.19 | |
| Telegraph and Telephone and Travel | 138.34 | |
| Educational Supplies | 180.47 | |
| Equipment | 767.76 | 1,272.76 |
| | | <hr/> |

Commercial Wood Shop—

| | | |
|----------------------------|-----------|----------|
| Labor | \$ 799.72 | |
| Supplies—Lumber, etc | 411.77 | 1,211.49 |
| | | <hr/> |

Cadet Exchange—

| | | |
|-----------------------------------|-----------|-----------|
| Salaries—Manager and Clerks | 766.41 | |
| Freight and Express | 356.46 | |
| Repairs | 8.33 | |
| Advertising, etc | 91.04 | |
| Text Books and Supplies | 16,632.86 | |
| Telephone & Telegraph | 21.90 | 17,877.06 |
| | | <hr/> |

Students Loans & Medals—

| | | |
|------------------------------|--------|----------|
| Loans to Students | 150.00 | |
| Medals (Norris) | 52.89 | |
| Fort Hill Bank—Deposit | 848.66 | 1,051.55 |

Co-operative Cotton Testing—

| | | |
|---------------------------------|--------|----------|
| Labor | 810.41 | |
| Freight and Express | 42.50 | |
| Repairs | 237.02 | |
| Other Contractual Service | 176.25 | |
| Office Supplies | 53.46 | |
| Other Supplies | 273.82 | |
| Educational Equipment | 51.02 | |
| Misc. Equipment | 83.25 | 1,727.73 |

Smith—Hughes Work—

| | | |
|---------------------------------------|-----------|-----------|
| Salaries—Supervisors & Teachers | 21,778.40 | |
| Traveling Expenses | 3,747.97 | |
| Bulletins | 39.62 | |
| Office Supplies | 276.97 | |
| Misc. Supplies | 271.75 | 26,114.71 |

Insurance Sinking Funds—

| | | |
|--------------------------|-------|-------|
| Insurance Premiums | 36.82 | |
| Labor and Material | 39.12 | 75.94 |

Smith-Lever Interest Fund—

| | | |
|---|----------|----------|
| Salaries | 204.23 | |
| Freight and Express | 51.39 | |
| Traveling Expenses | 520.66 | |
| Telegraph and Telephone | 68.91 | |
| Subscription to News Papers & Pub. | 1 388.11 | |
| Miscellaneous Supplies..... | 75.96 | |
| Office Equipment | 27.19 | 2,336.45 |

Rents—

| | | |
|-----------------------------------|-----------|-----------|
| Labor | 12.20 | |
| Misc. Equipment | 291.98 | |
| Transfer to College Account | 10,700.82 | 11,005.00 |

Receiving Account—

| | | |
|-----------------------------------|-----------|-----------|
| Freight and Express | 3.94 | |
| Transfer to College Account | 16,965.87 | |
| Misc. Supplies | 10.25 | |
| Refunds—Student Fees | 14.09 | 16.994.15 |

Miscellaneous Account—

| | | |
|-----------------------------------|--------|--------|
| Supplies | 3.58 | |
| Freigh and Express | 32.82 | |
| Transfer to College Account | 245.02 | 281.42 |

Official Testing—

| | | |
|-------------------------------------|----------|------------|
| Pay & Travel of Testers | 2,889.52 | 2,889.52 |
| | | 186,367.07 |
| Balance on Hand June 30, 1924 | | 22,608.35 |
| | | 208,975.42 |

CONSOLIDATED STATEMENT—REVOLVING FUND

(Revised Classification of Expenditures)

Personal Service—

| | | |
|--------------------------|--------------|--------------|
| Salaries | \$ 46,285.68 | |
| Wages | 5,372.32 | |
| Other Compensation | 1,477.02 | \$ 53,135.02 |

Supplies—

| | | |
|------------------------------------|-----------|-----------|
| Food Supplies | 9,621.06 | |
| Feed and Veterinary Supplies | 15,114.10 | |
| Sundry Supplies | 1,990.34 | |
| Office Supplies | 421.55 | |
| Athletic Supplies | 6,275.56 | |
| Fuel | 587.00 | |
| Text Books and Supplies | 16,632.86 | 50,642.47 |

Other Expenses—

| | | |
|------------------------------------|----------|-----------|
| Advertising and Printing | 134.34 | |
| Sundry Refunds | 274.75 | |
| Lyceum Entertainment | 900.00 | |
| Traveling Expenses | 7,819.96 | |
| Publications, Bulletins, etc. | 3,494.86 | |
| Contributions (Y. M. C. A.) | 2,200.00 | |
| Sundry Items not classified | 2,846.78 | 17,670.69 |

Guarantee Expenses of Visiting Foot Ball and other teams 11,739.00

\$133,187.18

Equipment—

| | | |
|-----------------------------|--------|----------|
| Office Equipment | 775.14 | |
| Educational Equipment | 60.98 | |
| Athletic Equipment | 475.84 | |
| Textile Equipment | 767.76 | |
| Other Equipment | 375.23 | 2,454.95 |

Permanent Improvements—

| | | |
|--|-----------|-----------|
| Building (Addition to Barracks) | 21,215.91 | |
| Bleachers, etc. (Athletic Field) | 1,597.32 | 22,813.23 |

\$158,455.36

| | | |
|--|--|-----------|
| Amount Transferred to College Fund | | 27,911.71 |
|--|--|-----------|

| | | |
|-------------|--|--------------|
| Total | | \$186,367.07 |
|-------------|--|--------------|

CLEMSON COLLEGE HOTEL

(Receipts and Disbursements—Year Ended June 30, 1924)

| | |
|--|-------------|
| Balance July 1, 1923 | \$ 1,407.49 |
| Receipts—July 1, '23 to June 30, '24 | 15,496.26 |
| Total | \$16,903.75 |

DISBURSEMENTS:**Personal Service—**

| | | |
|----------------|------------|------------|
| Salaries | \$2,155.00 | |
| Labor | 2,279.95 | \$4,434.95 |

| | | |
|--------------------------------|----------|--------------|
| Groceries and Supplies | 9,866.17 | |
| Freight and Express | 4.33 | |
| Heat, Light and Water | 633.53 | |
| Fuel | 978.25 | |
| Telephone and Telegraph | 31.10 | |
| Repairs (Material etc.) | 127.84 | |
| Advertising and Printing | 4.00 | |
| Laundry | 454.92 | |
| Miscellaneous | 4.42 | \$ 16,539.51 |

| | | |
|-----------------|--------|--------|
| Equipment | 149.48 | 149.48 |
|-----------------|--------|--------|

\$ 16,688.99

| | | |
|-----------------------------------|--|--------|
| *Cash Balance June 30, 1924 | | 214.76 |
|-----------------------------------|--|--------|

\$ 16,903.75

CASH STATEMENT

(June 30, 1924, Close of Business)

The Fort Hill Bank—

| | |
|---------------------------------------|-------------|
| Balance as per Bank Statement | \$ 2,022.10 |
| Less: Checks outstanding | 1,807.34 |
| | <hr/> |
| Treasurer's Balance | \$ 214.76 |
| | <hr/> |

SPECIAL FUNDS INCLUDING FEDERAL AID.

(Public Service)

General Comments—

Included in the business of the Treasurer's office, the following described accounts are kept on the books and records of this department. Inasmuch as Federal Aid figures largely in the public service and experimental work, which operates throughout the State, with headquarters at Clemson College, the College Treasurer is required to keep an elaborate set of records to meet the demands of the National Government, as well as comply with the State laws.

The direct appropriations of the Federal Government are known as the Adams Fund, the Hatch Fund and Smith-Lever (Federal) Fund. The receipts from such sources are supplemented by receipts from Farm Products and by State Aid, through the Smith-Lever (State) Fund, representing State appropriations required to match the Federal Fund to the extent specified by the Federal Government. The Treasurer also keeps a record of the direct State Appropriation, including also certain county funds, but this money is disbursed through the office of Comptroller General, as shown, so no cash passes through the Treasury of Clemson College from this source.

SOUTH CAROLINA EXPERIMENT STATION

(Fiscal Year Ended June 30, 1924)

| | |
|------------------------------|-------------|
| Balance July 1, 1924 | \$ 1,928.71 |
| (From Sale of Farm Products) | |

Receipts—**U. S. Treasury Warrants—**

| | |
|------------------|---------------------------|
| Adam Fund | \$15,000.00 |
| Hatch Fund | 15,000.00 \$ 30,000.00 |
| | <hr/> |

| | |
|-----------------------------|---------------------------|
| Sale of Farm Products | 35,989.24 \$ 65,989.24 |
| | <hr/> |
| Total | \$ 67,917.95 |

EXPENDITURES—**Personal Service—**

| | | |
|---|--------------|--------------|
| Salaries | \$ 19,996.78 | |
| Labor | 13,713.65 | \$ 33,710.43 |
| Publications | 761.72 | |
| Stationery and Office Supplies | 893.35 | |
| Freight and Express | 1,116.53 | |
| Heat, Light and Water | 2,240.06 | |
| Scientific Supplies | 420.11 | |
| Sundry Supplies | 4,919.39 | |
| Fertilizers | 2,320.25 | |
| Feeding Stuffs | 10,326.82 | |
| Library | 725.82 | |
| Traveling Expenses | 409.06 | |
| Contingent Expenses and Communication | 503.83 | 24,636.94 |
| | | <hr/> |
| | | \$ 58,347.37 |

Equipment and Apparatus—

| | | |
|------------------------------|----------|----------|
| Machinery and Tools | 2,723.71 | |
| Furniture and Fixtures | 411.65 | |
| Scientific Apparatus | 715.24 | |
| Live Stock | 2,421.44 | 6,272.04 |

Permanent Improvements—

| | | |
|--------------------------|----------|--------------|
| Land and Buildings | 1,215.21 | |
| | | <hr/> |
| | | \$ 65,834.62 |

Cash Balance June 30, 1924—

| | | |
|----------------------------------|----------|--------------|
| From Sale of Farm Products | 2,083.33 | |
| | | <hr/> |
| | | \$ 67,917.95 |

SMITH-LEVER EXTENSION FUND

(Year Ended June 30, 1924)

Receipts—

| | | |
|--|--------------|--------------|
| U. S. Treasury Warrants | \$156,014.49 | |
| State of South Carolina | \$110,862.85 | |
| County Funds (to supplement) 35,151.64 | 146,014.49 | |
| | <hr/> | |
| | \$302,028.98 | \$302,028.98 |

**Funds, Reported through Treasurer's Office
but not Actually handled by this office—**

| | | |
|-------------------------------------|-----------|--------------|
| County Appropriations | 70,722.22 | |
| Winthrop College Appropriation..... | 7,000.00 | 77,722.22 |
| | <hr/> | |
| Total | | \$379,751.20 |

EXPENDITURES—**Personal Service—**

| | |
|---------------------------------------|-------------|
| Salaries—Director and Assistants..... | \$ 6,785.28 |
| State Supervising Agents | 25,154.89 |
| Specialists | 58,632.90 |
| County Agents | 188,504.90 |
| Stenographers | 26,569.05 |

 \$305,647.02

| | | |
|-------------|--------|--------------|
| Labor | 683.47 | \$306,330.49 |
|-------------|--------|--------------|

| | | |
|------------------------------|-----------|-----------|
| Supplies and Materials | 6,824.15 | |
| Communication Service | 3,185.32 | |
| Traveling Expenses | 44,131.47 | |
| Freight and Express | 923.51 | |
| Publications | 6,522.09 | |
| Heat, Light and Water | 607.28 | |
| Office Rent for Agents | 3,244.08 | 65,437.90 |

 \$371,768.39

| | | |
|------------------------------|--|----------|
| Furniture and Fixtures | | 7,982.81 |
|------------------------------|--|----------|

| | | |
|-------------|--|--------------|
| Total | | \$379,751.20 |
|-------------|--|--------------|

**STATEMENT OF STATE APPROPRIATIONS PAID THROUGH
OFFICE OF COMPTROLLER GENERAL**

(Fund Reported by College Fiscal Year Ended June 30, 1924)

Appropriations—

| | |
|--|--------------|
| Agricultural Research | \$ 51,926.47 |
| Co-operative Boll Weevil Control | 18,851.13 |
| Crop Pests and Diseases | 9,672.49 |
| Live Stock Sanitary Work | 49,401.08 |
| Tick Eradication | 13,406.15 |
| Slaughtering Diseased Animals..... | 3,325.87 |

 Total (including County Funds—Supplemented) \$146,583.19

EXPENDITURES—**1.—Agricultural Research—****Personal Service—**

| | |
|---------------------------------|-------------|
| Salaries—Scientific Staff | \$14,342.45 |
| Assistant to Director | 1,900.00 |

| | | | |
|------------------------------------|----------|-------------|-----------|
| Chemist | 1,800.00 | | |
| Supt. Farm and Stations | 9,250.00 | | |
| Herdsmen—Dairies, etc. | 2,133.33 | | |
| Foreman—Hort. Division .. | 650.00 | \$30,075.78 | |
| <hr/> | | | |
| Labor with Experiments | 4,673.85 | | |
| Labor Animal Husb, Division | 1,206.88 | | |
| Labor—Dairy Division | 1,151.48 | | |
| Farm Labor, etc. | 932.50 | 7,964.71 | 38,040.49 |
| <hr/> | | | |
| For Publications | | 1,012.91 | |
| For Office Supplies | | 333.26 | |
| Tools, Implements, Repairs | | 784.50 | |
| Seed and Fertilizers | | 4,174.28 | |
| Feed and Veterinary Supplies | | 3,172.29 | |
| Motor Vehicle Supplies | | 148.02 | |
| Miscellaneous Supplies | | 69.19 | |
| Underdraining and Clearing | | 209.49 | |
| Fencing | | 109.34 | |
| Traveling Expenses | | 2,556.83 | 12,570.11 |
| <hr/> | | | |

Equipment—

| | | | |
|-------------------------------------|--------|--|--------------|
| Live Stock | 400.00 | | |
| Office Equipment | 46.54 | | |
| Machinery and Equipment | 739.78 | | |
| Miscellaneous Small Equipment | 129.55 | | 1,315.87 |
| <hr/> | | | \$ 51,926.47 |

2.—Crop Pests and Diseases**Personal Service—**

| | | | |
|----------------------------------|------------|------------|--------------|
| Salaries—Scientific /Staff | \$5,888.62 | | |
| Clerks and Stenographers | 1,032.00 | | |
| Labor—Poisoning Work | 62.55 | \$6,983.17 | |
| <hr/> | | | |
| Traveling Expenses | | 2,115.33 | |
| Telephone and Telegraph | | 132.57 | |
| Office Supplies | | 441.42 | 9,672.49 |
| <hr/> | | | \$ 61,598.96 |

3.—Co-operative Boll Weevil Control—**Personal Service—**

| | | | |
|-----------------------------------|------------|-------------|--|
| Salaries—Scientific Staff | \$6,115.83 | | |
| Stenographer | 1,884.96 | | |
| Salaries—Temporary Assists. | 4,880.20 | \$12,880.99 | |
| <hr/> | | | |
| Common Labor—Producing Crop | | 189.05 | |
| <hr/> | | | |

SUPPLEMENTARY REPORTS

| | | |
|---------------------------------|-----------|--|
| | 13,070.04 | |
| Telegraph and Telephone | 51.64 | |
| Traveling Expenses | 1,503.40 | |
| Repair Parts to Machinery | 37.19 | |
| Office Supplies | 113.11 | |
| Motor Vehicle Supplies | 314.07 | |
| Seeds and Fertilizers | 839.00 | |
| Poison Supplies | 1,277.82 | |
| Toilet Sewer Disposal | 178.30 | |
| Motor Vehicles | 14.55 | |
| Office Building | 14.55 | |
| Miscellaneous Expenses | 419.92 | |
| | <hr/> | |
| | 17,833.59 | |
| | <hr/> | |

Equipment—

| | | |
|--------------------------------------|----------|--------------|
| Scientific Equipment | 659.71 | |
| Dusting and Spraying Machinery | 318.83 | |
| Live Stock | 39.00 | |
| | <hr/> | |
| | 1,017.54 | \$ 18,851.13 |
| | <hr/> | |

4.—Livestock Sanitary Work—**Personal Service—**

| | | |
|------------------------------|-------------|-------------|
| Saalries—Veterinarians | \$25,320.00 | |
| Assistants to Vets. | 8,698.00 | |
| Deputy State Vet. (Fee) | 155.63 | \$34,173.63 |
| | <hr/> | |

| | | |
|-------------------------------|-----------|--|
| Traveling Expenses | 11,491.22 | |
| Telephone and Telegraph | 233.96 | |
| Office Supplies | 213.46 | |
| Other Supplies | 1,910.36 | |
| Rent | 894.67 | |
| | <hr/> | |
| | 14,743.67 | |
| | <hr/> | |

Equipment—

| | | |
|------------------------|--------|-----------|
| Office Equipment | 65.00 | |
| Other Equipment | 418.78 | |
| | <hr/> | |
| | 483.78 | 49,401.08 |
| | <hr/> | |

5.—Tick Eradication—**Personal Service—**

| | | |
|---------------------------|------------|--|
| Salaries—Inspectors | \$5,978.33 | |
|---------------------------|------------|--|

| | | | |
|--|----------|----------|--------------|
| Salaries—Clerks | 1,750.00 | 7,728.33 | |
| Wages | | 1,598.00 | |
| | | <hr/> | |
| | | 9,326.33 | |
| Traveling Expense | 111.98 | | |
| Laundry and Dis't Supplies..... | 3,625.38 | | |
| Miscellaneous Supplies | 342.46 | 4,079.82 | 13,406.15 |
| | <hr/> | <hr/> | |
| 6.—Slaughtering Diseased Animals— | | | |
| Payment to Owners of Diseased Livestock which have been condemned and slaughtered | | 3,325.87 | 3,325.87 |
| | | <hr/> | <hr/> |
| Total | | | \$146,583.19 |

GENERAL CASH REPORT

(All Funds)

Combined Statement—

A combined statement of all funds for which the Treasurer of Clemson College is responsible, under his bond, will be found on page — .This statement is supported by the cash on hand and in banks as reported on the following pages.

The actual count of cash was made at the close of business October 31, 1924, the date on which this audit was closed, and the statements on page —, will show my methods of verifying the general cash account. I do not deem it necessary to include any further cash statements, but will say that I have verified all bank balances by detailed audit, to the close of business October 31, 1924, proving the correctness of the Treasurer's accounting for cash receipts and disbursements since the close of the fiscal year (i.e. June 30, 1924) and submit on page—, statements showing the results of this verification.

I beg to report that all funds of record, within the entire period covered by this audit, have been accounted for in an entirely satisfactory manner.

COMBINED STATEMENT—ALL FUNDS

(Fiscal Year Ended June 30, 1924)

Cash Balances July 1, 1923—

| | | |
|--------------------------------|--------------|--------------|
| College Account | \$148,911.33 | |
| Cadet Fund | 12,395.74 | |
| Revolving Fund | 39,984.12 | |
| S. C. Experiment Station | 1,928.71 | |
| Students Banking Account | 2,641.87 | |
| | <hr/> | |
| | \$205,861.77 | \$205,861.77 |

Receipts For Fiscal Year—

| | | |
|-------------------------------------|--------------|----------------|
| College Account | 404,717.22 | |
| Cadet Fund | 263,413.71 | |
| Students Banking Account | 58,994.44 | |
| Revolving Fund | 168,991.30 | |
| Hatch Fund | 15,000.00 | |
| Adams Fund | 15,000.00 | |
| S. C. Experiment Station | 35,989.24 | |
| <hr/> | | |
| Smith-Lever Extension Fund | | |
| (Including amounts reported by | | |
| Counties and by Winthrop College) | \$379 751.20 | 1,341,857.11 |
| State Appropriation—Handled through | | |
| Comptroller General's Office | | \$146,583.19 |
| <hr/> | | |
| Total All Sources | | \$1,694,302.07 |
| <hr/> <hr/> | | |

Expenditures—

| | | |
|--|--------------|----------------|
| College Account | \$429,549.00 | |
| Cadet Fund | 257,376.65 | |
| Checks Paid—Students Banking Account | 59,684.70 | |
| Revolving Fund | 186,367.07 | |
| Adams Fund | 15,000.00 | |
| Hatch Fund | 15,000.00 | |
| S. C. Experiment Station Account | 35,834.62 | |
| Smith-Lever Extension Fund 'Including | | |
| Counties and Winthrop College) ... | \$379,751.20 | \$1,378 563.24 |
| <hr/> | | |
| State Appropriation—Paid Direct | | |
| through office of Comptroller General | | |
| Agricultural Research..... | \$ 51,926.47 | |
| Co-operative Boll Weevil Control | 18,851.13 | |
| Crop Pest and Diseases | 9,672.49 | |
| Livestock Sanitary Work | 49,401.08 | |
| Tick Eradication | 13,406.15 | |
| Slaughtering Diseased Livestock | 3,325.87 | 146,583.19 |
| <hr/> | | |
| | | 1,525,146.43 |
| Cash Balance June 30, 1924 (All Funds) | | 169,155.64 |
| <hr/> | | |
| | | \$1 694,302.07 |
| <hr/> <hr/> | | |

GENERAL CASH STATEMENT

(Close of Business June 30, 1924)

Balances to Account for—

| | | |
|---------------------------------------|--------------|--------------|
| College General Fund | \$124,079.55 | |
| Cadet Fund | 18,432.80 | |
| S. C. Experiment Station Account..... | 2,083.33 | |
| Revolving Fund | 22,608.35 | |
| Students Deposits | 1,951.61 | |
| Total to Account for | | \$169,155.61 |

Accounted for as Follows

| | Bank Cer- tificate | Treasurer's Balance. |
|---|-----------------------|-------------------------|
| Interest Bearing Deposits— | | |
| Bank of Anderson | \$ 10,439.84 | |
| Farmers and Merchants Bank, Anderson | 10,843.88 | |
| National Bank of Sumter | 20,000.00 | |
| Farmers Bank, Abbeville | 20,000.00 | |
| Peoples Savings Bank, Abbeville | 4 000.00 | |
| Union Savings Bank, Bennettsville | 25,000.00 | |
| Bank of Greenwood | 17,000.00 | |
| Fort Hill Bank, Clemson College | 3,000.00 | |
| Commercial Bank, Greenwood..... | 15,500.00 | |
| Bank of Pendleton (Time Deposit) | 5,000.00 | |
| Carolina National Bank, Anderson | 5,000.00 | |
| National Bank of Newberry | 20,000.00 | |
| Carolina National Bank Columbia | 2,000.00 | 157,783.72 |

Checking Account—**Bank of Pendleton—**

Balance as per Bank Statement.....\$ 47,348.52

Deduct—Overdraft Smith-Lever Fund 19,020.80 | |

\$ 28,327.72

Less—Checks outstanding

Smith-Lever Fund 2,979.20 | |

General Account 15,928.21 | 18,907.41 |

Net Balance 9,420.31 | 9,420.31 |

Cash in Office | 167,204.03 |

1,951.61

\$169,155.64

GENERAL OFFICE CASH STATEMENT

(July 1, 1924 to October 31, 1924)

Cash Balance July 1, 1924 1 951.61

Cash Receipts—

| | | |
|--|-------------|--------------|
| Adams Fund | \$ 7,500.00 | |
| Cadet Fund | 122,176.40 | |
| Cadet Deposits Accounts | 29,841.45 | |
| Clemson Bequest | 1,756.18 | |
| Hatch Fund | 7,500.00 | |
| Landscript | 2,877.00 | |
| Miscellaneous College Receipts | 30,790.75 | |
| Miscellaneous Petty Funds | 67,357.92 | |
| Morrill Fund | 25,000.00 | |
| Smith-Lever Fund (Federal) | 78,007.24 | |
| Smith-Lever Fund (State) | 110,862.85 | |
| South Carolina Experiment Station (Reinvestment Fund) | 8 533.22 | |
| Tuition | 5,330.00 | |
| Privilege Fertilizer Tag Tax | 2,259.75 | \$499,792.77 |
| | | <hr/> |
| | | \$501,744.38 |

Deduct—

| | |
|---------------------------------------|------------|
| Cash Disbursements—Deposits, etc..... | 499,581.98 |
| Cash Balance October 31, 1924..... | 2,162.40 |

STATEMENT OF CASH IN OFFICE

(Count of Cash, Close of Business, Oct. 31, 1924.)

National Currency and Legal Tender—

| | | |
|---------------------------|-----------|----------|
| Twenty dollar bills | \$ 240.00 | |
| Ten dollar bills | 130.00 | |
| Five dollar bills | 1,335.00 | |
| One dollar bills | 354.00 | 2,059.00 |

Gold Coin—

| | | |
|--------------|-------|-------|
| Twenty | 20.00 | |
| Tens | 40.00 | |
| Fives | 20.00 | 80.00 |

Silver and Minor Coin—

| | | |
|----------------|-------|-------|
| Halves | 6.00 | |
| Quarters | 11.00 | |
| Dimes | 5.00 | |
| Nickels | 95 | |
| Coppers | 21.07 | 44.02 |

| | | |
|------------------------------|-------|----------|
| Actual Cash as Counted | <hr/> | 2,183.02 |
|------------------------------|-------|----------|

Checks for Deposit—

| | | |
|---|-----------|-----------|
| Sundry Checks (as audited) | | |
| Deposited Bank of Pendleton | | |
| See duplicate Deposit Ticket Oct. 31, '24 | 17,040.10 | |
| Post Office Money Orders | 510.55 | 17,550.65 |
| Cash and Checks for deposit | | 19,733.67 |

Other Items Counted as Cash (as audited)

| | | |
|---|----------|-----------|
| Advances, pay rolls, traveling, etc. | 1,564.34 | |
| Sundry Protested Checks | 354.67 | |
| Freight, Express and Postage Items | 372.44 | |
| Refunds to Students | 3 295.18 | 5,586.63 |
| | | 25,320.30 |

Deduct—

| | | |
|--|-----------|-----------|
| Cash Items Included above— | | |
| for November account | 2,052.20 | |
| Overdraft clearing account Bank of | | |
| Pendleton | 21,105.70 | 23,157.90 |
| Net Cash Balance (as per cash book)..... | | 2,162.40 |

GENERAL CASH STATEMENT**College Fund.**

(October 30, 1924).

Interest Bearing Accounts (4 percent on average Daily Balance)

| | | |
|--|-------------|--------------|
| Farmers and Merchants Bank, Ander- son, | \$ 9,759.50 | |
| National Bank of Sumter | 30,500.00 | |
| Farmers Bank, Abbeville | 20,000.00 | |
| Union Savings Bank, Bennettsville | 25 000.00 | |
| Bank of Greenwood | 17,000.00 | |
| Fort Hill Bank | 3,000.00 | |
| Carolina National Bank, Anderson, | 5,000.00 | |
| Bank of Anderson | 10,439.84 | |
| Norwood National Bank, Greenville..... | 25,000.00 | |
| Bank of Pendleton | 5,000.00 | \$150,699.34 |

Checking Account—

| | | |
|-------------------------------------|-----------|--------------|
| Bank of Pendleton: | | |
| Balance as per Bank Statement | 34 483.56 | |
| Less: Checks Out | 11,812.70 | \$ 22,670.86 |
| Treasurer's Balance | | \$173,370.20 |

Distribution of Cash Balance.

| | | |
|----------------------------|---------------------|---------------------|
| College Account | \$ 92,322.25 | |
| Cade. Fund | 59,365.47 | |
| Re-Investment Fund | 13,389.07 | |
| Adams Fund | 3,037.19 | |
| Hatch Fund | 3,720.75 | |
| Farm Products | 1,535.47 | |
| Totals as per Ledger | <u>\$173,370.20</u> | <u>\$173,370.20</u> |

GENERAL CASH STATEMENT**Smith-Lever Fund.**

(October 31, 1924).

| | | |
|---|--------------|--------------|
| Interest Bearing Accounts (4 percent on average Daily Balance) | | |
| National Bank of Newberry | \$ 20 000.00 | |
| Columbia National Bank | 33,000.00 | |
| American Bank and Trust Co., Columbia | 38,007.24 | |
| Norwood National Bank, Greenville | 15,000.00 | |
| Central National Bank, Spartanburg ... | 15,000.00 | \$121,007.24 |
| Checking Account— | | |
| Bank of Pendleton | \$ 1,323.87 | |
| Less: Checks out | 805.41 | \$ 518.46 |
| Treasurer's Balance | | 121,525.70 |

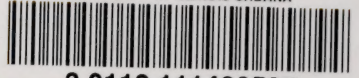
DISTRIBUTION OF CASH BALANCES

| | | |
|--|---------------------|---------------------|
| Federal Smith-Lever | \$ 31,620.09 | |
| State Smith-Lever | 85,823.83 | |
| Federal Smith-Lever (Supplemented) | 4,081.78 | |
| Total as per Ledger | <u>\$121,525.70</u> | <u>\$121,525.70</u> |

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